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HIGH POINTS

- In the last decade elementary-school enrolments have increased 32.4 percent but elementary-school teachers in service have increased only 30.0 percent. In the same 10-year period secondary-school enrolments have increased 39.0 percent; teachers in secondary-school service, 33.4 percent.

- In the next decade college enrolments promise to increase *at a faster rate* than either elementary- or secondary-school enrolments.

- The number of college graduates prepared for secondary-school teaching has responded to quite different influences from those affecting the flow of new elementary-school teachers; in the five years following 1950 the number of new secondary-school teachers dropped 42.8 percent while the number of new elementary-school teachers climbed 31.9 percent.

- As many as 4 of every 5 college graduates prepared for elementary-school teaching actually enter classroom service while only 3 of every 5 prepared for secondary-school teaching do so.

- As many as one-half of all new teachers employed in September 1956 came from sources other than the 1956 class of college graduates.

- The typical elementary-school teacher of 1957 is better prepared, by one full year of college education, than was her counterpart in 1947.

- The outstanding achievement of the postwar era has been the improved status of elementary-school teachers. Higher standards adopted in almost every state and the widespread acceptance of the single-salary concept have been major contributors.

- The postwar record indicates clearly that high standards of preparation and admission to the teaching profession tend to stimulate the interest of youth of high ability, while low standards discourage them.

- The annual national teacher supply and demand report provides a factual basis for improved counseling of both high-school and college students.

I. Introduction

Despite a forbidding array of handicaps which would have appalled a less hardy group, the educational leaders of this nation have marched steadily forward in their postwar efforts to provide competent teachers for the American system of education. The expanding numbers of children to be taught and the growing competition of other occupations have been accepted as a challenge rather than an excuse. The effectiveness of the schools of 1957 is a tribute to the resourcefulness and imagination of those who saw a task to be performed and refused to believe it could not be done.

But the tribulations of the past 12 years, since the end of World War II, have been enough to discourage a less dedicated and truly professional group. In many cases no substantial measure of relief has been provided; palliatives have been and continue to be the order of the day. And the years just ahead are certain to bring new problems in a different framework and of even greater magnitude. Only with the highest type of leadership and the enthusiastic support of the whole corps of teachers can we expect the American schools to weather the storms of the next decade without suffering the kind of deterioration which will impose serious handicaps upon millions of children and adults from the kindergarten thru the graduate school.

What Caused the Teacher Shortage?

Starting with 1945, as we emerged from a period of total mobilization, the elementary and secondary schools and the colleges have been faced with a constantly changing set of circumstances. Some of the factors to be reckoned with have been persistent while others have temporarily dominated the scene and then subsided. New factors are appearing at this moment. A review of the following will perhaps set the stage for this report:

1. During four years of total war effort the flow of students into teacher-education programs fell to a small fraction of the need. Thus the struggle of the schools and colleges to re-establish even the prewar standards began with an accumulated four-year deficit of qualified personnel. The violent impact of this war mobilization factor subsided almost as quickly as it arose, but that four-year gap in the normal flow continues to contribute to the shortage of competent teachers.

2. The amazing technological growth of our society, with its ever increasing variety of occupations and positions calling for a high level of preparation, has forced the nation for the first time to a sober review of our profligate use of human resources. Our responsibility for the development of each individual to his highest productive capacity comes into new focus. Only now are we realizing that the teacher shortage is an inseparable part of a widespread shortage of highly trained personnel. And surely we cannot foresee any early easement in the competitive demand for persons with a comprehensive background of formal education. The impact of this factor seems more likely to be extended.

3. Prior to 1945 nobody could have foreseen the tremendous impact of Public Law 346—the G. I. Bill which provided federal scholarships to veterans. Overnight the colleges were confronted with the task of almost doubling their instructional staffs. But the graduate schools had been doing a negligible business in the years just past, and the reservoir of available, qualified college teaching candidates was quickly exhausted. Candor requires apology for some of the expediencies to which many colleges were driven; the only consoling feature was the realization that the causal factor was a temporary one and would soon subside—as it did.

4. The G. I.-caused upsurge brought about a profound change in the complexion of the college graduating classes of 1947 to 1954. Men predominated, and these men distributed themselves in a new pattern, first with respect to the percent who chose to prepare for the profession of teaching and, secondly, with respect to their choice of field if they chose to teach. The fact that these prospective teaching candidates were concentrated chiefly in the fields of least need (and fewest opportunities) does not provoke a happy commentary upon the counseling they received. Not until 1956 did the total bachelor's degree graduating class again assume the normal division by sex. Nothing now on the horizon bespeaks a recurrence of the extreme imbalance reached in 1950.

5. Too little cognizance has been taken of the far-reaching and lasting influences of the Korean War and its aftermath. Just prior to June 1950, almost every boy who was reaching adulthood enjoyed, within the limits of his personal finances, the full privilege of choosing his immediate occupation—gainful employment or continued formal education. Then came the belated realization that the United States must draw upon that diminishing segment of the population, the 18- to 26-year-old males, for an expanded military establishment to be maintained on a continuing basis. The impact of this change in our international position upon the total available supply of manpower for all our civilian activities threatens to continue indefinitely.

6. The steady increase in the number of college graduates prepared for elementary-school teaching—up one-third from 1950 to 1955 while the number of all college graduates was falling off one-third and the number of those prepared for secondary-school teaching was being reduced by two-fifths—was a boon to the cause of elementary education. Now the conditions have been completely reversed. No longer will the new supply of qualified elementary-school teachers gain on the supply of new potential secondary-school teachers. The ratio of need will remain substantially the same—two elementary to one secondary; but the year 1955 marked the high point in the trend toward a more desirable balance in the new supply.

7. With the postwar era came a significant change in the marriage and family customs of the nation. Young women have been marrying at an earlier age, and they have been bearing more children—a sharp reversal of the prewar trend. Early motherhood has a compound effect upon the schools: It removes many young women from any gainful occupation, and it adds to the number of children soon to enter school. A continuance of this trend seems to be in prospect.

8. Contrary to popular belief, our present dilemma cannot be charged to sheer numbers of pupils alone. True, the number of live births in a given year is a reasonably accurate index to the total task of the elementary schools six to 11 years later, but the secondary schools reflect the impact of forces other than the total number in the age bracket. The fact that secondary-school enrolments have increased *at a faster rate* since 1947 than have elementary-school enrolments reveals just one of the many tricks which numbers can play.

9. Perhaps the phenomenon of the postwar period has been the violent fluctuations in college enrolments, their lack of consistent relation with the number of college graduates, and their emerging and subsiding causes. The past dozen years provide a fertile field for a study of circumstances which, singly and in combination, have dictated our progress in the struggle to provide a sufficient number of competent teachers at all levels and in all subjects of instruction. Our degree of success in the years ahead may similarly be dictated by our resourcefulness in foreseeing new influences and estimating their impact upon the available supply of competent teachers. Limitation of space permits the posing of only this one:

In past years it has been relatively easy for any high-school graduate who was so inclined to gain admission to college. Ahead now lies the likelihood that much sharper limitations will be imposed, particularly in certain types of institutions, some of which have contributed meaningfully to the new supply of teachers. Will a new standard of selective admission tend to draw future student bodies from different segments of our society than is now the case? Already we hear the expressed fear that certain groups of young people may be "priced out of" college attendance. There is much evidence that most of our new teacher material has come from identifiable strata in our socioeconomic structure. Will the young men and women interested in the profession of teaching be admitted to college in greater, the same, or fewer proportionate numbers? What will be the occupational ambitions of those future college students who may be required to survive a much more rigid set of admission practices?

The above nine items only illustrate the complex nature of the task ahead. They emphasize the need for much factual information. This report is designed to provide a background for further investigations. It can do no more, however, than to pave the way. Intensive studies must be undertaken, particularly on a statewide basis. Too little is known of the reasons for the wide variations among the states which are reported on the following pages. Scarcely anywhere is there

evidence of an existing long-range plan to meet and surmount future difficulties. Only a few states have started to conduct surveys designed to bring into focus the respective needs of the elementary schools, the secondary schools, and the institutions of higher education. Certainly an end to the struggle to provide competent teachers is not in sight.

Background for the Report

This is not a report of an original study, as has been the case in previous issues of the RESEARCH BULLETIN; it is a review of the studies by the National Education Association of the postwar teacher supply and demand problem. Unless otherwise indicated, the data presented in the following pages are derived from earlier NEA reports.

The problem at the elementary and secondary levels has been investigated on an annual basis, and a national report has been issued each of the past 10 years, 1948 to 1957. For obvious reasons, the NEA could not probe those aspects of the problem which are peculiar to a region, state, or local area. For equally clear reasons, the national study has been confined to those broad, over-all questions which are pertinent to every community. Trends in four types of information are shown, as follows:

1. The new supply each year of adequately prepared teachers, as indicated by graduation from a four-year college program including the requirements for the standard teacher's certificate in the state in which the college is located
2. The occupations which claim these newly qualified potential candidates immediately after their graduation
3. The identification of all new teachers as they enter service on a full-time basis, and a classification of them according to the positions they enter
4. The level of general academic preparation of all elementary-school teachers in service, in the realization that a classification of these teachers by type of certificate held has little or no meaning across state lines.

Procedures to collect these four types of information have been developed gradually as conditions in each state would permit. Full participation by all states has been achieved in only the first step—a report on the number of newly qualified candidates to emerge from the colleges. Thruout the entire 10-year development of the study, an appropriate official (usually the state director of certification and teacher education) in each of the 48 states and his counterpart in the three territories and the District of Columbia have carried on the investigation within their own states.

During the years 1948 thru 1952 the report was issued as a monograph; from 1953 thru 1957 it has been published in the March issue of the *Journal of Teacher Education*.

The annual study was begun and continued thru 1957 under the sponsorship of the National Commission on Teacher Education and Professional Standards. Since 1953 it has been conducted and the report prepared by the NEA Research Division. The first three national reports (1948, 1949, and 1950) were issued at Emporia, Kansas, where the director of the study was in service as a college administrative officer, and where he had conducted a regional study under the auspices of the Commission on Research and Service of the North Central Association of Colleges and Secondary Schools, beginning in 1942.

The investigation of the problem at the college level has, to date, developed on a less regular basis. The pioneer national study, reported in 1950, under the sponsorship of the NEA Commission mentioned above was conducted at Lansing, Michigan, where the director was an official in the State Department of Education. The investigation of this problem was renewed by the NEA Research Division in 1955 and a national report was issued in December of that year. The second in a biennial series is now nearing completion and will be reported late in 1957. The study of teacher supply and demand at the college level alternates with a biennial study of salaries paid by institutions of higher education; the teacher supply and demand study at the elementary and secondary levels is conducted annually, with future reports to be published directly by the Research Division.

This report is presented in two parts. The first part provides a review of postwar elementary- and secondary-school conditions; the second part looks at the problem from the college viewpoint.

The lack of complete year-by-year reports imposes a serious limitation which must be recognized. The tables and charts cover various periods of time between 1945 and 1957, as dictated by the availability of the data.

II. The Postwar Teacher Supply and Demand Problem in the Elementary and Secondary Schools

It is a mistake to oversimplify the task of staffing the schools of the nation by depending upon numbers only. Since the numbers refer to people rather than to inanimate objects, the changing attitudes and desires of people exert varying effects upon the meaning of total numbers of both children and teachers involved in the operation of the public school system.

Where are teachers needed, and for what specific kinds of educational service—these two questions greatly complicate the study of teacher supply and demand. The constant swing of events since 1945 is enough to show not only that this problem is not easily solved, but that we should not expect it to stay solved if we do achieve a temporary solution. Nevertheless, a review of the postwar efforts must start with the primary factor—the number of live births each year. This is the one single fact upon which there must be unanimous agreement. Almost immediately come differences of opinion concerning nursery schools, kindergartens, age of admission to the first grade, policies concerning promotion of elementary-school pupils, services to the handicapped and the gifted, the needed number of supervisory and administrative personnel, and of course, class size. And beyond the differing opinions are these three complicating factors: the mobility of the children to be taught, the willingness or hesitance of teachers to go where their services are needed, and the matching of the available teachers, according to their fields of preparation, with the positions to be filled.

The Meaning of Birth Statistics

Figure I and Table 1 tell an amazing story. Thirty years ago, after a steady climb, total births in one year came to a peak of 2,674,000 in 1928. Then came the downturn. The modern low of 2,307,000 was reached in 1933, but it was not until 1941 that the 1928 figure was again equaled. From these intervening 13 years comes the accumulated deficit of young manpower which has handicapped and will continue to plague the schools, as well as all the competing occupations.

The year 1955 marked the low in the number of 18-, 19-, 20-, and 21-year-olds; this means, of course, that 1960 will be the low for the number of 23- to 26-year-olds—the ages when the more highly trained men holding advanced degrees tend to seek their places in the occupational life of the nation. But probably these statistics pose the most severe threat to the 1970's; in those years the reservoir from which begins to emerge the leadership of the next generation will be at an all-time low of the twentieth century.

While all phases of our occupational life are affected by this protracted shortage of youth coming to adulthood, the schools, and particularly the elementary schools, have been struck a double blow; the supply of teachers has diminished at the same time the number of children to be taught has increased. The biggest one-year jump in births—553,000—occurred in 1946, followed immediately by

TABLE 1.—NUMBER OF LIVE BIRTHS, 1928 THRU 1956

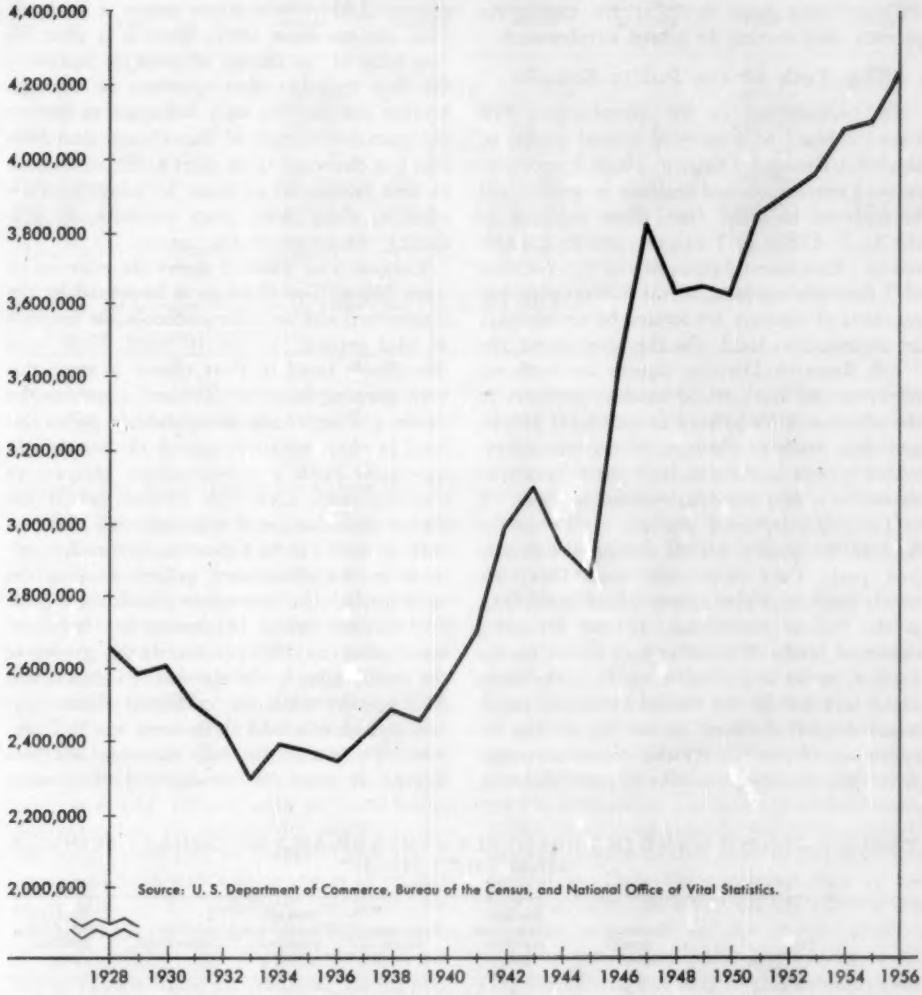
Year	Number of live births*	Net change from previous year	Percent change from previous year
1	2	3	4
1928	2,674,000	.....	.....
1929	2,582,000	− 92,000	− 3.4%
1930	2,618,000	+ 36,000	+ 1.4
1931	2,506,000	−112,000	− 4.3
1932	2,440,000	− 66,000	− 2.6
1933	2,307,000	−133,000	− 5.5
1934	2,396,000	+ 89,000	+ 3.9
1935	2,377,000	− 19,000	− 0.8
1936	2,355,000	− 22,000	− 0.9
1937	2,413,000	+ 58,000	+ 2.5
1938	2,496,000	+ 83,000	+ 3.4
1939	2,466,000	− 30,000	− 1.2
1940	2,559,000	+ 93,000	+ 3.8
1941	2,703,000	+144,000	+ 5.6
1942	2,989,000	+286,000	+10.6
1943	3,104,000	+115,000	+ 3.8
1944	2,939,000	−165,000	− 5.3
1945	2,858,000	− 81,000	− 2.8
1946	3,411,000	+553,000	+19.3
1947	3,817,000	+406,000	+11.9
1948	3,637,000	−180,000	− 4.7
1949	3,649,000	+ 12,000	+ 0.3
1950	3,627,000	− 22,000	− 0.6
1951	3,856,000	+229,000	+ 6.3
1952	3,912,000	+ 56,000	+ 1.5
1953	3,965,000	+ 53,000	+ 1.4
1954	4,078,000	+113,000	+ 2.8
1955	4,091,000	+ 13,000	+ 0.3
1956	4,220,000	+129,000	+ 3.2
Change from 1928 to 1956	1,546,000	1,546,000	+57.8%

Sources: U. S. Department of Commerce, Bureau of the Census. *Estimates of the Population of the United States and Components of Population Change: 1950 to 1957.* Current Population Reports, Series P-25, No. 153. Washington, D. C.: the Bureau, March 28, 1957. Table 1, p. 3. Federal Security Agency, Public Health Service, National Office of Vital Statistics. *Births and Birth Rates in the Entire United States, 1909–1948.* Special Reports, Selected Studies, Vol. 33, No. 8. Washington, D. C.: the Office, September 29, 1950. Table 1, p. 141.

* Adjusted for underregistration and for births in states not in the birth-registration area.

FIGURE I

RECORD OF LIVE BIRTHS, 1928-1956



the second largest annual increase—406,000 in 1947. In just two years the total number of live births zoomed from 2,858,000 to 3,817,000. These children, now averaging 10 years of age, were followed by three groups averaging some 200,000 less—those born in 1948, 1949, and 1950. But to the dismay of the demographers who predicted a leveling off from the 1947 peak, each year since 1950 has brought a larger number of babies, and who is now courageous enough to predict a turn in the trend?[1]

All the phenomenal increases in births during the past 10 years have occurred in the face of a steady downtrend in the number of youth to attain the normal age of marriage. Now school officials may well "view with concern" the long upsweep in the curve which

[1] At the end of July the 1957 births for the first seven months were reported to be 2,421,000, up 3.4 percent from the 2,324,000 reported for the first seven months of 1956. The month-by-month birth report shows the July 1957 figure exceeds that of July 1956 by 4.1 percent.

presages many more marriages per year. One may well ask, What will be the impact upon the schools three decades hence when the 4 million babies born in 1956 are themselves parents contributing to school enrolments?

The Task of the Public Schools

As pointed out in the introduction, this report is based on a series of annual studies of the NEA Research Division. These figures concerning enrolments and teachers in service will be observed to differ from those reported by the U. S. Office of Education chiefly for this reason: Enrolment figures of the U. S. Office of Education conform to the 8-4 division but numbers of teachers are totaled by certification or organization level. On the other hand, the NEA Research Division figures for *both* enrolments and numbers of teachers conform to the administrative pattern in each local district and thus totals of elementary- and secondary-school pupils are comparable with totals of elementary- and secondary-school teachers.

Table 2 provides a realistic review of the task of the public schools during the decade just past. Two facts stand out. One, the steady increase in elementary-school enrolment, is the logical consequence of the foregoing report of births. The other fact seems, on the surface, to be a contradiction. It is the more rapid increase in the secondary-school enrolment despite the well-known lag in the increase of 14- to 17-year-olds when compared with the expanding numbers of small children.

Since 1947 the increase in the elementary grades has been 5,702,889, just 32.4 percent. In the secondary schools, however, the addition of 2,434,499 students means a jump of 39.0 percent since 1947. Here is a clear illustration of the impact of multiple factors—the first evidence that numbers in the age bracket are not the only influence to dictate the quantitative task of the schools. And here also is a challenge to be alert to the emergence of new factors which must be taken into the account, along with gross numbers, in predicting conditions in the future.

Column 6 of Table 2 shows the addition of some 8¼ million children to be served by the elementary and secondary schools, an increase of 34.2 percent, in just 10 years. How have the schools fared in their efforts to meet this ever growing burden? Table 3 provides the answer: *The schools have steadily fallen behind in their efforts to match the increase in enrolment with a commensurate increase in teaching staff.* Over the 10-year period the elementary-school staff was expanded 30.0 percent, against the 32.4 percent increased enrolment in the elementary grades. During the same period the secondary-school staff grew 33.4 percent while enrolments at that level were going up 39.0 percent. In all grades of the public schools the enrolment increase was 34.2 percent while the combined elementary- and secondary-school staffs went up 31.2 percent. To grasp the full meaning of these figures, it must be remembered that many

TABLE 2.—ENROLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, 1947-48 THRU 1956-57 [a]

Year	Elementary-school enrolment	Percent change from previous year	Secondary-school enrolment	Percent change from previous year	Total enrolment	Percent change from previous year
1	2	3	4	5	6	7
1947–48	17,600,000	...	6,501,300	...	24,101,300	...
1948–49	17,848,913	+1.4%	6,804,470	+4.7%	24,653,383	+2.3%
1949–50	18,612,408	+4.3	6,523,028	−4.1	25,135,436	+2.0
1950–51	19,010,554	+2.1	6,783,956	+4.0	25,794,510	+2.6
1951–52	19,713,202	+3.7	6,998,454	+3.2	26,711,656	+3.6
1952–53	20,121,866	+2.1	7,410,569	+5.9	27,532,435	+3.1
1953–54	20,029,384	−0.5	7,887,319	+6.4	27,916,703	+1.4
1954–55	21,774,216	+8.7	8,191,836	+3.9	29,966,052	+7.3
1955–56	22,519,049	+3.4	8,662,289	+5.7	31,141,338	+3.9
1956–57	23,302,889	+3.5	9,035,799	+4.3	32,338,688	+3.8
Change from 1947–48 to 1956–57	+5,702,889	+32.4%	+2,534,499	+39.0%	+8,237,388	+34.2%

Source: Columns 2, 4, and 6 from: National Education Association, Research Division. *Advance Estimates of Public Elementary and Secondary Schools for the School Years,* 1947-48 thru 1956-57.

[a] As indicated in the discussion, the enrolment figures used in this study will be found to differ from those published by the U. S. Office of Education for these reasons: (a) in the NEA reports the break between elementary and secondary is in accordance with the administrative organization of each local district and (b) the NEA reports of enrolment are consistent with reports of the number of public elementary- and secondary-school teachers in service, as shown in Table 3.

TABLE 3.—NUMBER OF PUBLIC ELEMENTARY- AND SECONDARY-SCHOOL TEACHERS IN SERVICE, 1947-48 THRU 1956-57 [a]

Year	Number of elementary-school teachers	Percent change from previous year	Number of secondary-school teachers	Percent change from previous year	Total	Percent change from previous year
1	2	3	4	5	6	7
1947–48	578,226[b]	...	319,746[b]	...	897,972[b]	...
1948–49	594,047[b]	+2.7%	330,289[b]	+3.3%	924,336[b]	+2.9%
1949–50	586,276	−1.3	318,163	−3.7	904,439	−2.2
1950–51	604,131	+3.0	323,486	+1.7	927,617	+2.6
1951–52	627,285	+3.8	329,173	+1.8	956,458	+3.1
1952–53	653,573	+4.2	339,010	+3.0	992,583	+3.8
1953–54	661,900	+1.3	362,848	+7.0	1,024,748	+3.2
1954–55	690,987	+4.4	389,342	+7.3	1,080,329	+5.4
1955–56	718,772	+4.0	408,329	+4.9	1,127,101	+4.3
1956–57	751,490	+4.6	426,560	+4.5	1,178,050	+4.5
Change from 1947–48 to 1956–57.	+173,264	+30.0%	+106,814	+33.4%	+280,078	+31.2%

Source: Columns 2, 4, and 6 from: National Education Association, Research Division. *Advance Estimates of Public Elementary and Secondary Schools for the School Years,* 1947-48 thru 1956-57.

[a] See footnote to Table 2.

[b] Includes principals and supervisors.

classrooms were overcrowded and many teachers were overloaded at the beginning of the decade.

Where Do New Teachers Come From?

Long ago the alert superintendent learned to explore every possible source of candidates, particularly for the elementary grades and certain high-school assignments. In the general population there are (a) former teachers with valid certificates, (b) college graduates of earlier years who have not taught but who prepared for teaching while attending college, (c) college graduates who did not prepare for teaching but who might now take such courses as are required for a temporary certificate, and (d) persons who are not college graduates but for whom the superintendent can obtain some kind of license. These are the usual sources to which an employer of teachers turns after he has exhausted the possibilities offered by the current crop of college seniors—the group at the point of graduation, and generally known to be in readiness for employment.

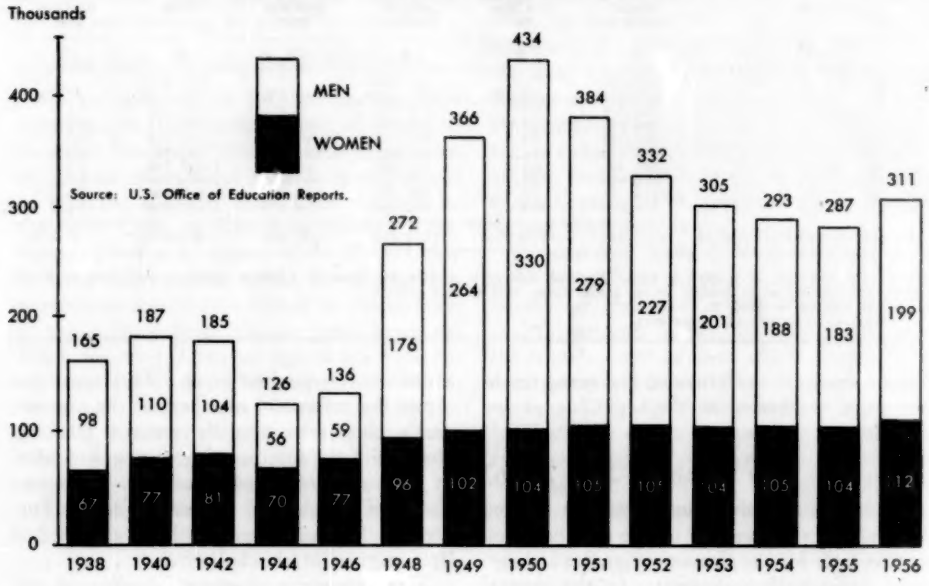
In recent years a procedure has been developed for the accurate reporting of this latter group—the current class—as early as March of the year in which the class will be graduated. A report is distributed to all superintendents of schools some three months before this new supply of eligible candidates will leave the college campuses. From it, the superintendent learns how many new college graduates will be prepared for (a) elementary-school teaching, and (b) each teaching field at the secondary-school level. (The report also shows the percent of members of the previous year's class who actually entered teaching, along with the total number of positions filled by new teachers the previous year. These two phases of the Annual National Teacher Supply and Demand Report will be discussed in later sections of this bulletin.)

This new group of emerging college graduates has come to be known as the current "supply." It is so designated only because it is the only group susceptible of accurate counting. The other sources mentioned above will, of course, contribute to the total number of new teachers employed in the spring and thru the summer for the opening of the school year in September. The point to be emphasized is that there is no possible way of counting in advance those who will come from the general population. *Only the oncoming class of college graduates can be accurately counted and reported according to the specific kind of teaching position each one is prepared to fill.* To this extent, but only to this extent, should this new group be labeled the "supply" of teachers. Whenever a report on this "supply" is considered, we must remember that it will be supplemented by other persons drawn from the other reservoirs described above.

It must also be recognized, however, that candidates will not come from the general population unless (a) their basic collegiate studies have prepared them at least in part for teaching, (b) their personal circumstances have been altered during the year, or (c) the inducements to enter teaching are made more

FIGURE II

TOTAL NUMBER OF (BACHELOR'S DEGREE) GRADUATES, BY SEX, 1938 TO 1948 BIENNIALLY, AND 1948 TO 1956 ANNUALLY (IN THOUSANDS)



attractive. Each graduate of earlier years not already engaged in teaching must be convinced that he should now turn from his present occupation. It is not only impossible to estimate in advance the number who will do so; it is also impossible to predict the qualifications for their specific teaching assignments which these people will bring to the classroom.

The annual report enables the superintendent and his board of education to get a broad overview of the national situation early in the spring when the search for new teachers usually gets under way. This national report is usually supplemented by a report issued by the appropriate official in each state department of education which points up the statewide situation in greater detail.

A Decade of New Supply

The postwar picture is full of elements which could not have been anticipated at the time of the historic Chautauqua Conference in 1946 when the teaching profession undertook to survey the chaotic state of the elementary and secondary schools and to plan a systematic search for improvement.[2] Among the events which followed, these stand out because of their influence upon the supply of teachers:

1. The number of college (bachelor's degree) graduates fluctuated violently, rising from a low of 126,000 in 1944 to a peak of 434,000 in 1950, then falling for each of the following five years, down to 287,000 in 1955. (See Figure II.)

2. The number of college graduates lost all normal relationship to total college enrolment, due to the influx of veterans with advanced standing during the 1946-1950 period. In 1950 a total college enrolment of 2,296,000 yielded 434,000 bachelor's degree graduates; in 1955 a college enrolment of 2,678,000 yielded only 287,000 comparable graduates.

3. The ratio of men to women fluctuated violently; men receiving the bachelor's degree rose from 56,000 in 1944 to 330,000 in 1950, while the number of women climbed only from 70,000 to 104,000. The number of men

[2] It was at the Chautauqua Conference that plans were laid for the creation of the National Commission on Teacher Education and Professional Standards. The proposal was later approved by the NEA Delegate Assembly in Detroit.

graduates declined from 330,000 in 1950 to 183,000 in 1955, while the number of women graduates remained constant at 104,000, with a change of less than 1 percent during the entire five-year period. (See Figure II.)

4. Of all college graduates, the percent who prepared to teach has steadily strengthened since 1948. In that year it was 24.2. In 1949 it was 25.6 percent; in 1950, 26.6 percent; in 1951, 27.8 percent; in 1952, 29.9 percent; in 1953, 30.0 percent; in 1954, 29.3 percent; in 1955, 30.4 percent; and in 1956, it was 31.4 percent. The 1957 class (final enrolment figures are not yet available) probably made a high of about 32.0 percent. (See Figure III.)

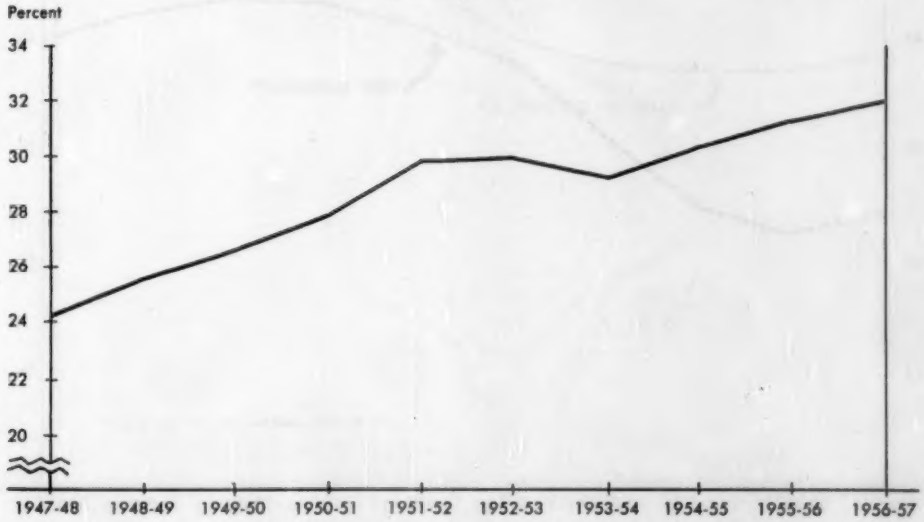
5. In 1948 (the first year the figures became available on the national basis) and again in 1949 more than three-fourths of all college graduates who had prepared for teaching were concentrated in the secondary-school subjects. Then followed five years of steady improvement in the ratio of elementary- to secondary-school teaching candidates. The most favorable division was reached in 1955, when 43.2 percent of the newly qualified graduates were prepared for elementary-school service. During the past two years this favorable trend has been reversed, and the concentration in the secondary-school subjects is again gaining. The implications here for more effective guidance are tremendous since the need for new elementary-school teachers is practically twice the need for new high-school teachers. (See Figure IV.)

6. Of all bachelor's degree graduates, the percent who are men ranged from 64.7 in 1948 to 76.0 in 1950 and then down to 64.0 in 1954. The low of 63.8 percent was reached in 1955, followed by slight increases since that date. And among the graduates prepared to teach, a similar division of the sexes is noted. In 1952 (the first year these separate data were available) 44.2 percent of the potential new teachers were men. This percent dropped annually to 36.7 in 1955, since which time the ratio of men to women has begun to show an increase. (See Figure V.)

Figure VI presents a composite picture. Total bachelor's degree graduates are shown to have climbed from 272,144 in 1948 to 433,734 in 1950, then down to 287,401 in 1955, followed by a modest upturn in the two most recent classes. Graduates prepared for secondary-school teaching show a similar pattern, only with a sharper climb from 1948 to 1950 and a sharper drop to 1955. But Figure VI shows most clearly the diminishing percent

FIGURE III

PERCENT OF ALL (BACHELOR'S DEGREE) GRADUATES WHO PREPARED FOR TEACHING, 1948 THRU 1957



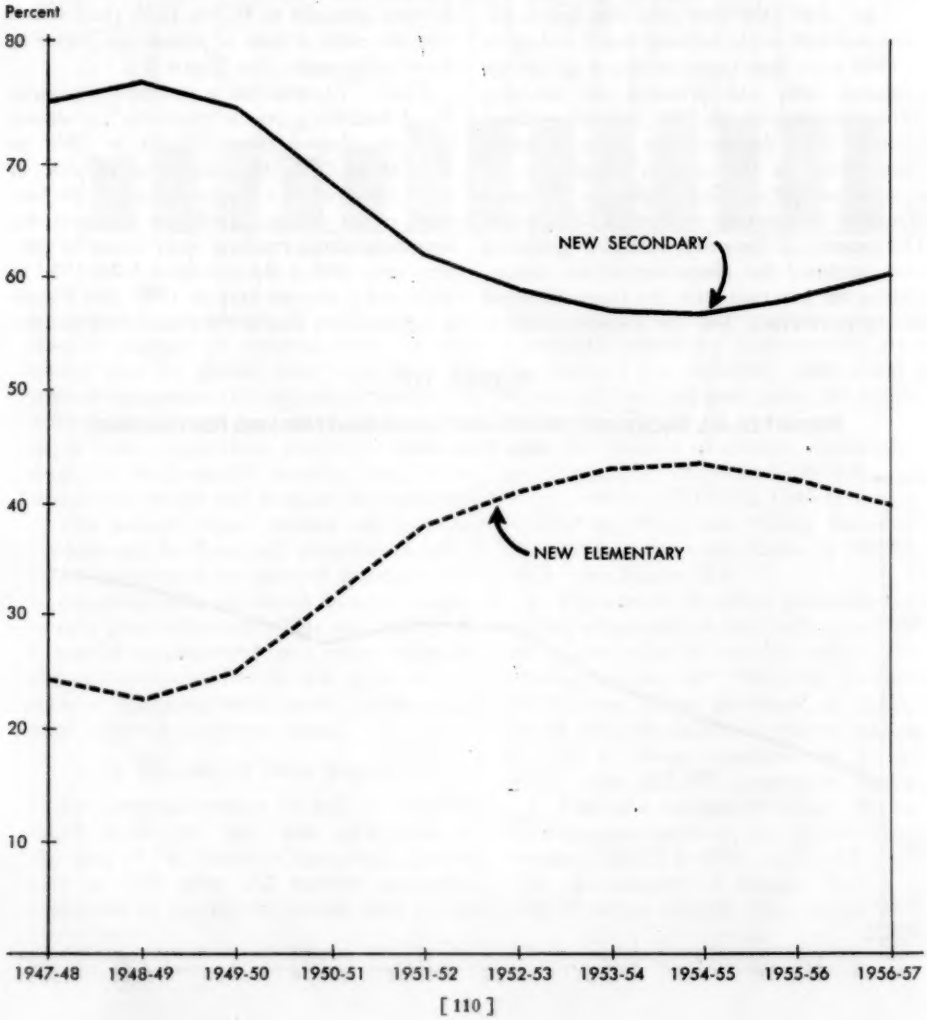
of all graduates prepared for elementary-school teaching. For eight consecutive years the increase was most encouraging; now it appears that the imbalance is again accentuated—the future ratio of new elementary- to new secondary-school teachers will be directly in conflict with the ratio of need.

Table 4 sums up what has happened during the decade just past. The year-by-year changes are shown both in gross numbers and in the percent of change. Over the 10-year span the total number of college graduates gained 21.3 percent; the number prepared for elementary-school teaching gained 167.7 percent; the number prepared for secondary-school teaching gained 29.4 percent. The over-all gain in college graduates prepared for teaching was 63.0 percent.

Table 5 reveals another side of the "supply" problem faced by the secondary schools. Thruout the past decade the shortage has been selective—teachers prepared in certain

FIGURE IV

DIVISION BY GRADE LEVEL OF ALL (BACHELOR'S DEGREE) GRADUATES WHO PREPARED FOR TEACHING, 1948 THRU 1957



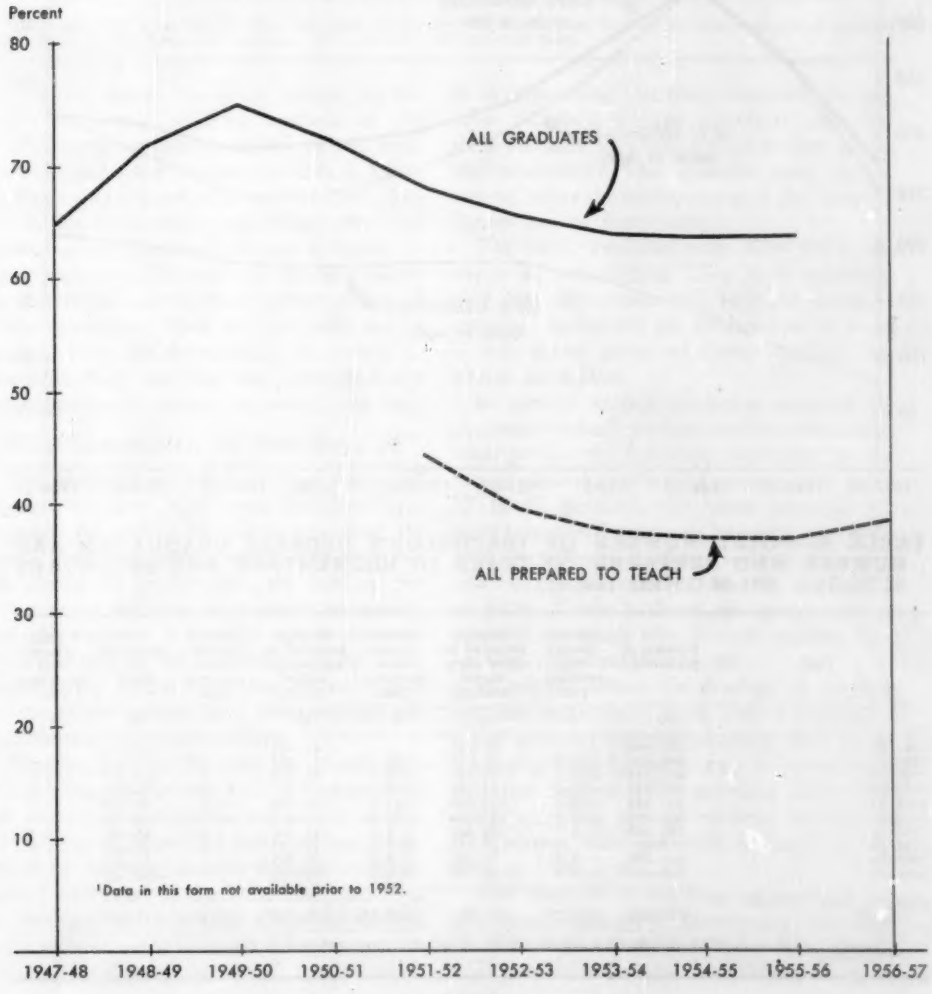
subjects have been extremely scarce while qualified candidates in other fields have been in reasonably comfortable supply. These two extremes best illustrate the point:

1. Recent developments in business, industry, commerce and transportation, government, and international relations have greatly increased America's needs for scientists and engineers. Here the primary role of the public schools is apparent—to identify and encourage the young student with aptitude for and interest in scientific studies. But the diminishing supply of new teaching candidates in science and mathematics fell precipitately from 1950 to 1955, and the modest increase recently does not compensate for that loss. Moreover, the aggressive competition of other occupations for this inadequate supply makes even more difficult the task of staffing the schools.

2. With the return of millions of men from the military service, where physical fitness was constantly stressed, the number of men pre-

FIGURE V

PERCENT MEN AMONG ALL (BACHELOR'S DEGREE) GRADUATES, 1948 THRU 1956, AND AMONG THOSE PREPARED TO TEACH, 1952 THRU 1957[1]



paring to teach physical education zoomed sensationally; more than 10,000 were graduated in 1950, despite the fact that at no time have the schools provided openings for more than 3000 new entrants in this field. Lack of proper counseling permits many men to spend their four college years without acquiring sufficient preparation in any of the academic fields to become competent teachers in a good combination of subjects.

FIGURE VI

TOTAL (BACHELOR'S DEGREE) GRADUATES, NUMBER PREPARED FOR ELEMENTARY SCHOOL TEACHING, AND NUMBER PREPARED FOR SECONDARY SCHOOL TEACHING, 1948 THRU 1957

(Total graduates in hundred thousands; new teachers in ten thousands)

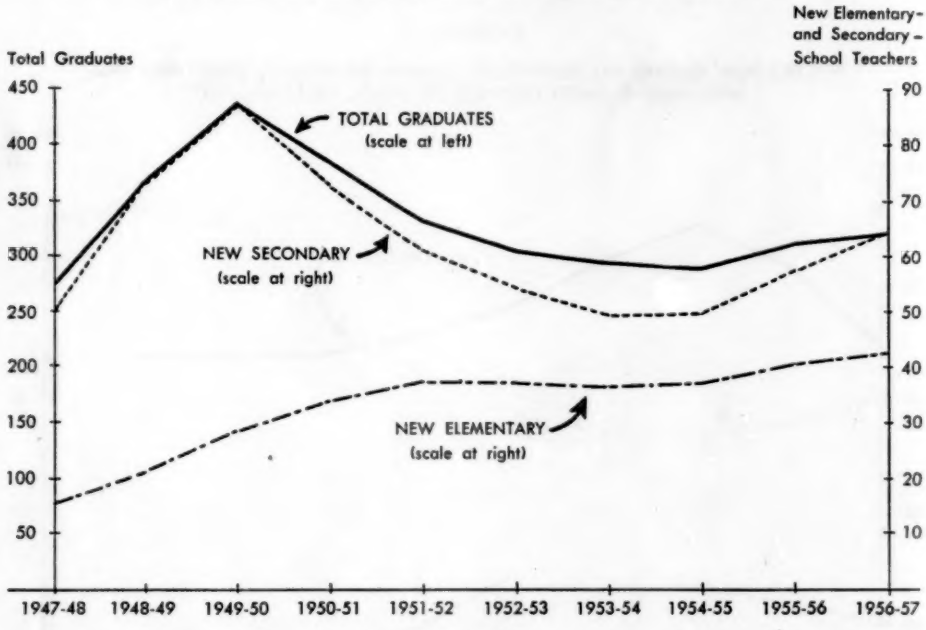


TABLE 4.—TOTAL NUMBER OF (BACHELOR'S DEGREE) GRADUATES, AND NUMBER WHO PREPARED TO TEACH IN ELEMENTARY AND SECONDARY SCHOOLS, 1947-48 THRU 1956-57

Year	Number of graduates[a]	Percent change from previous year	Number prepared for elementary-school teaching	Percent change from previous year	Number prepared for secondary-school teaching	Percent change from previous year	Total prepared to teach	Percent change from previous year
1	2	3	4	5	6	7	8	9
1947–48	272,144	...	15,985	...	49,954	...	65,939	...
1948–49	366,634	+34.7%	21,060	+31.7%	72,707	+45.5%	93,767	+42.4%
1949–50	433,734	+18.3	28,587	+35.7	86,890	+19.5	115,477	+23.2
1950–51	384,352	−11.4	33,782	+18.2	73,015	−16.0	106,797	− 7.5
1951–52	331,924	−13.6	37,649	+11.4	61,510	−15.8	99,159	− 7.2
1952–53	304,857	− 8.2	37,430	− 0.6	54,013	−12.2	91,443	− 7.8
1953–54	292,880	− 3.9	36,885	− 1.5	48,916	− 9.4	85,801	− 6.2
1954–55	287,401	− 1.9	37,712	+ 2.2	49,697	+ 1.6	87,409	+ 1.9
1955–56	311,298	+ 8.3	40,801	+ 8.2	56,785	+14.3	97,586	+11.6
1956–57	330,000[b]	+ 6.0	42,796	+ 4.9	64,656	+13.9	107,452	+10.1
Change from 1947–48 to 1956–57	+57,856	+21.3%	+26,811	+167.7%	+14,702	+29.4%	+41,513	+63.0%

[a] Column 2 from U. S. Office of Education annual reports on earned degrees conferred.
[b] Estimated.

TABLE 5.—TOTAL NUMBER OF (BACHELOR'S DEGREE) GRADUATES PREPARED FOR SECONDARY-SCHOOL TEACHING, BY FIELD OF PREPARATION IN 1948, 1950, 1954, AND 1957 *

Field of preparation	1948	1950	1954	1957	1948 to 1957, net change
1	2	3	4	5	6
Agriculture	1,999	3,294	1,541	1,716	−283
Art	1,267	2,225	1,856	2,386	+1,119
Commerce	4,274	7,235	5,278	6,118	+1,844
English	7,002	10,709	5,391	8,463	+1,461
Foreign language	1,643	2,193	1,368	1,525	−118
Home economics	3,830	4,899	4,212	4,794	+964
Industrial arts	2,080	4,890	2,201	3,354	+1,274
Library science	333	471	317	356	+23
Mathematics	2,781	4,618	2,223	2,892	+111
Music	3,153	5,296	4,323	5,277	+2,124
Physical education (men)	4,551	10,614	4,834	6,911	+2,360
Physical education (women)	2,229	3,178	2,440	2,872	+643
Science	4,382	9,096	3,641	5,044	+662
Social studies	8,555	15,349	7,227	10,566	+2,011
Other	1,875	2,823	2,064	2,382	+507
Total	49,954	86,890	48,916	64,656	+14,702

* The year 1948 is the first for which these data are available; 1950 is the year in which the highest number of graduates were prepared for secondary-school teaching; 1954 is the low; 1957 the most recent.

Table 5 shows the wide swings in the supply of newly qualified teachers of the various secondary-school subjects. These field-by-field reports first became available in 1948; the numbers mounted to a peak in 1950, then fell to the 1954 low, since which time they have gradually increased, but in a highly irregular manner. Column 5 of the table shows the distribution of the most recent group of college graduates. They are obviously out of balance with the distribution of secondary-school teaching positions, and thus challenge the adequacy of current counseling practices.

What Happens to the New Supply?

The foregoing review might lead the casual observer to view with some confidence our prospects for staffing the public schools of the nation with competent teachers. The task does not appear to be hopeless; the outlook for improvement seems to be generally promising. But the observer is brought up short when he is confronted with another set of hard facts—facts concerning the occupational choices of the persons who comprise this annual "supply" of new teachers.

Happily, here in America the choice of a college program does not bind the graduate to any particular occupation for which he has been prepared. More and more, college preparation for teaching stresses the well-rounded, general education of the individual, and thus the members of each class of college seniors find a wide range of occupational opportunities invitingly displayed for their consideration. It is a sobering question, therefore, to ask, How successful are the schools in capturing these annually produced groups of new potential candidates? This question must be answered before the true meaning of the "supply" figures can be determined.

The facts, available only since 1953, are not at all encouraging. They show unmistakably that the schools still lack the funds to compete successfully for the services of many of this choice group of newly qualified potential candidates.

In general, college graduates prepared for elementary-school teaching tend to enter classroom service the following September at the rate of about 4 of every 5 (ranging from about 77 to 82 percent). Of those prepared for secondary-school teaching, however, not quite 2 of every 3 take teaching positions. The percent has ranged from 53.3 in 1953 up to 63.2 in 1956. Table 6 shows the proportion of prepared graduates who become teachers, field by field, and separately by sex.

In science, where the shortage of teachers has been particularly acute, only 3 of every 5 (59.4 percent) entered teaching. And in interpreting these figures it must be remembered that the class of 1956 contained only 4320 newly qualified science teachers, a drop of 52.5 percent from the 9096 produced by the class of 1950.

The shortage of mathematics teachers has also been emphasized. Members of the class of 1950 prepared to teach this subject totaled 4618; in 1956 the total was 2544 (a drop of

TABLE 6.—PERCENT OF GRADUATES WITH QUALIFICATIONS FOR STANDARD TEACHING CERTIFICATE WHO ENTERED TEACHING IN SEPTEMBER FOLLOWING GRADUATION, 1953 THRU 1956

Field of preparation	1953	1954	1955	1956
1	2	3	4	5
High school (by field)				
Agriculture				
Men	44.2%	41.3%	44.6%	50.8%
Women	4.4	14.3	0.0	14.3
Total	42.1	41.0	44.6	50.6
Art				
Men	42.7	53.4	57.5	59.0
Women	65.9	68.3	70.3	70.9
Total	57.7	62.6	65.9	66.5
Commerce				
Men	39.6	42.0	48.8	54.7
Women	65.5	67.2	60.7	57.0
Total	53.1	58.1	56.5	56.2
English				
Men	43.1	52.2	61.1	63.0
Women	71.7	74.8	72.9	70.6
Total	62.3	67.9	69.4	68.4
Foreign language				
Men	30.4	40.5	47.9	57.0
Women	58.8	65.1	66.0	64.4
Total	46.9	56.0	60.0	62.1
Home economics				
Men	0.0	33.3	0.0	75.0
Women	69.9	66.4	65.7	65.2
Total	69.9	66.4	65.7	65.2
Industrial arts				
Men	53.3	57.7	61.1	61.8
Women	0.0	11.1	0.0	39.1
Total	53.3	57.1	61.1	61.5
Journalism				
Men	50.0	53.3	25.0	20.9
Women	30.0	64.6	54.5	30.0
Total	40.9	59.3	43.4	26.5
Library science				
Men	52.9	85.8	85.7	78.6
Women	75.3	85.5	78.2	76.6
Total	71.7	85.6	78.9	76.8
Mathematics				
Men	39.3	52.9	65.5	65.3
Women	64.1	69.3	70.5	68.0
Total	46.5	59.0	67.3	66.3
Music				
Men	49.9	55.9	62.7	66.2
Women	74.3	77.4	73.5	71.2
Total	63.6	68.5	68.8	68.9
Physical education				
Men	42.6	47.1	54.7	60.2
Women	75.4	76.3	78.1	78.2
Total	53.3	56.7	62.4	65.7
Science*				
Men	34.9	44.7	53.5	58.6
Women	50.5	52.0	63.6	61.6
Total	38.2	47.0	56.4	59.4
Social science				
Men	40.3	47.8	56.3	57.1
Women	51.3	60.2	63.2	66.1
Total	43.2	51.8	58.5	59.8
Speech				
Men	29.3	47.3	50.0	50.9
Women	52.7	64.2	67.6	68.3
Total	44.4	57.8	61.7	61.5
Other				
Men	56.5	46.6	60.5	50.7
Women	65.5	43.7	53.6	47.5
Total	60.1	45.2	57.2	48.9
High-school total				
Men	43.0	47.5	57.8	60.1
Women	66.4	64.8	68.5	66.7
Total	53.3	55.7	62.9	63.2
Elementary-school total				
Men	55.7	65.1	74.6	74.2
Women	81.7	81.7	82.7	81.9
Total	77.1	78.9	81.6	80.8
Grand total				
Men	45.7	51.0	60.6	62.2
Women	75.9	74.5	76.9	75.5
Total	64.4%	65.8%	71.3%	70.7%

*Includes graduates with major in the comprehensive field of science, or in biology, or chemistry, or physics.

44.9 percent) and of these, only 66.3 percent entered teaching service last September. One of every three of this greatly reduced number did not respond to the urgent cry of the secondary schools for mathematics teachers.

Table 6 shows what is happening in each teaching field. The loss of potential candidates is substantial in every phase of the instructional program. The dilemma of the secondary schools comes into focus more clearly as this report of current conditions is examined. Even so, the trend since 1955, points to some measure of relief at this level at the expense of the elementary schools. The hard fact stands out that the counseling of students has been weak. High-school students and even college freshmen and sophomores know woefully little about the comparative demands for teachers at the various grade levels or among the various subject fields.

What Other Occupations Attract College Graduates Prepared To Teach?

What happens to college graduates who have fully completed the requirements for the teaching license but who do not take teaching positions? The loss is about 1 of every 5 potential elementary- and about 1 of every 3 potential secondary-school teachers.

Table 7 shows the manner in which members of the class of 1956 exercised their choices. Of those prepared for secondary-school teaching, about 1 in 10 (9.3 percent) chose another gainful occupation, whereas only 2.1 percent of those prepared for elementary-school teaching did so. Continued formal study also appeals quite differently to the members of these groups. Many of those prepared for secondary-school teaching may be

TABLE 7.—PERCENT OF 1955-56 COLLEGE GRADUATES PREPARED FOR TEACHING WHO CHOSE OTHER ACTIVITIES

Activity in year following graduation	Percent of all prepared for	
	Elementary-school teaching	Secondary-school teaching
1	2	3
Other gainful occupation	2.1%	9.3%
Continuing formal study	1.7	6.2
Military service	0.8	6.0
Homemaking	4.7	3.9
Miscellaneous	9.9	11.4
Total	19.2%	36.8%

looking forward to supervision, administration, special education service, or possibly college teaching; those prepared for elementary-school teaching are more likely to consider the four-year college program as the springboard to immediate classroom service. Military service strikes the secondary-school group hardest because about one-half of them are men, whereas homemaking affects the group of potential elementary-school teachers most because they are predominantly women.

Among the specific teaching fields, those prepared to teach the sciences, the commercial subjects, agriculture, industrial arts, mathematics, and home economics are most likely to be attracted elsewhere, while those prepared to teach music, art, English, foreign language, and the social studies are more likely to be immediately interested in teaching.

Of those who elect to continue formal study, the newly qualified teachers of science are most numerous, along with those prepared to teach the foreign languages. Only a few of those prepared to teach home economics, art, physical education, or agriculture do so.

Homemaking draws most heavily (15.3 percent) from college graduates prepared to teach girls' physical education, and those prepared to teach home economics (11.2 percent). Figure VII presents the situation in another way; the potential elementary-school teachers are shown separately by sex on the left, and the potential secondary-school teachers on the right.

What Is the Demand for Teachers?

Discussion of this question requires a clear definition of *demand* because it is commonly used in two quite different ways. One use of the term does no more than to indicate *the number of persons needed to fill the vacancies in existing and newly created positions, for which local systems provide salaries to employ somebody either with or without satisfactory qualifications for the assignment.* The other definition of *demand* indicates *the number of competent teachers required to provide each elementary- and secondary-school pupil with a fair educational opportunity.*

Only the latter definition is acceptable, because only by its use can the personnel needs of the schools be described. This definition of *demand* has been employed thruout the past 10-year period covered by the annual national study as a means of informing the public of the actual, realistic needs of the public schools. The other definition is used only as a means of identifying the new teachers (coming from all sources) who enter service at the beginning or during each school year. The use of the restricted definition makes possible a report which most concisely describes the nature of the positions which were filled by persons coming from outside the corps of teachers in service the preceding year.[8] The number and the specific nature of these positions is of vital importance for the student in training to become a teacher. These students (and all others considering teaching as a profession) should be kept constantly up to date on the number and requirements of the positions likely to be open to them, together with the latest available figures on the number of likely applicants for these prospective openings. Only with this information at hand is the student fairly protected as he invests his time, efforts, and resources in preparation for an occupation. Public-school administrators and high-school and college teachers have a firsthand responsibility (a) to keep themselves informed, and (b) to inform students and help them in the application of these facts to their own individual circumstances. The goal of the NEA Research Division in conducting an annual nationwide study is to assemble the most up-to-date information and to make it available to all persons engaged in educational service.

In applying the broad, realistic definition of *demand* for teachers, five specific types of need are identified, as follows:

1. The demand for teachers to replace those who quit teaching because of death, retirement, disability, choice of other occupation, resumption of formal study, military service, homemaking, and all other reasons. The demand to replace these persons is necessary to continue the operation of the classroom units of the previous year.

2. The demand for *more* teachers to serve the steadily growing enrolment. Table 2, page 106, shows that this figure has increased by

[8] Thruout this discussion the teacher who transfers from one position to another is completely excluded; such a teacher does not satisfy a "demand"—he merely shifts the demand from the position he fills to the one he vacates. Teachers who change positions should not be considered in the study of supply and demand.

more than 8¼ million enrolees in the public elementary and secondary schools since 1947.

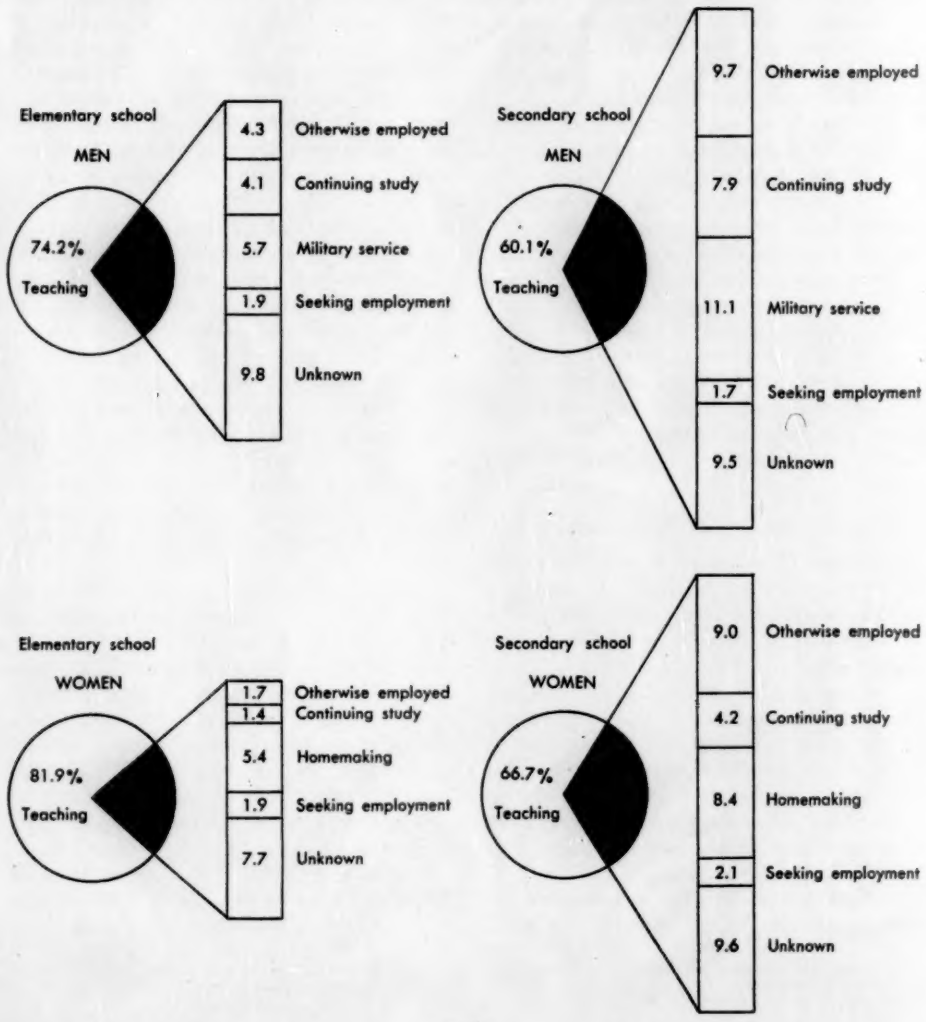
3. The demand for *more* teachers to relieve unjustifiable overcrowding and to eliminate half-day sessions. The most recent NEA Research Division report[4] shows that in the urban elementary schools 6½ million children were in classes of more than 30 each, 2½ million were in classes of more than 35 each, ½ million were in classes of more than 40 each, and almost 89,000 were in classes of more than 45 each. The same report showed more than ¼ million elementary-school children restricted to half-day sessions.

4. The demand for teachers to give instruction and educational services not now provided

[4] National Education Association, Research Division. *Class Size in the Elementary Schools of Urban School Districts, 1955-56.* Special Memo. Washington, D. C.: the Association, July 1956. 20 p. 25¢.

FIGURE VII

OCCUPATIONS OF (BACHELOR'S DEGREE) GRADUATES OF 1956 WHO WERE PREPARED TO TEACH



in many, particularly the smaller, elementary and secondary schools of the nation. Many school offerings are lacking one or more elements now considered essential for an effective program.

5. The demand for qualified teachers to replace those persons now in classroom service whose preparation is utterly inadequate.

The requirements in each of these broad categories are reviewed annually in the national study of teacher supply and demand. The accuracy of the estimates has been improved from year to year as procedures for the assembling of the data have been established and strengthened. The 1957 report indicated the September 1956 demand was as follows:

Replacements	95,000
To serve added enrolment	25,000
To relieve overcrowding and eliminate half-day sessions	30,000
To add necessary services	12,500
To replace the unprepared	65,000
Total	227,500

The college graduating class of 1956 included 97,500 qualified potential candidates (excluding those certificated on less than a college degree). This means that if all the eligible 1956 graduates had taken teaching positions, school officials would have been forced to find 130,000 qualified persons in the general population to meet the educationally justifiable needs, or "demands" of the public elementary and secondary schools of the nation. Obviously, this was not done for at least these two reasons: (a) *Funds were not provided to create new positions in the numbers needed.* (b) *The needed numbers of qualified persons were not found to be available in the general population. The result, inevitably, is a continuation of the shortage of qualified teachers to provide every elementary- and secondary-school pupil a fair educational opportunity.*

The extent of the shortage in the 1957-58 school year has not yet been finally assessed. In an advance release dated August 17, 1957, however, the U. S. Office of Education placed the current shortage at 135,000, not including the need for more teachers (a) to relieve overcrowding and (b) to enrich the curriculum and offer other educational services.

How Was Demand Met in 1956?

In recent years the effort has been made, as a part of the annual national study, to discover the extent to which the total needs of the schools have been met. Procedures for this complicated task have developed slowly and have not even yet become operative in some states.[5] Thus this phase of the annual investigation can best be illustrated by Table 8, taken from the report issued in March 1957. It contains complete data from 32 states, Alaska, and the District of Columbia. From this table it is possible to get a clear picture of the *number* and the *specific nature* of the positions which were filled by *new* teachers in the reporting states. This picture is not to be confused with a report of the total number of vacancies filled, because a vast number of vacancies are filled by teachers transferring from other positions. Many of these transferring teachers have the higher qualifications required by certain positions which are not open to the new teacher. Table 8 is limited, therefore, to those positions which were filled by new teachers, which is the most meaningful information to be used in counseling the student in training to become a teacher.

Table 8 shows the total number of new teachers employed in 1956 in the reporting states to be 62,099. If conditions in these reporting states are typical—if they are representative of conditions in the other states also—then it is estimated that 138,000 new teachers were employed by the public schools in 1956. The colleges produced only 97,586 newly qualified candidates, but only 68,993, or 70.7 percent of those eligible accepted teaching positions. This means that *at least* 69,000 new teachers employed in 1956 were not members of the college graduating class of 1956. Who they are, from what sources they came, and what qualifications they had for the positions they accepted are vitally important, but unanswered questions. These questions focus attention upon those phases of the annual national study that are yet to be developed. Contributors to the national study are keenly aware of the need for more in-

[5] Local school leaders can do much to support the appropriate official in the state department of education as he undertakes this task. The cooperation of every local school district is necessary if new teachers are to be identified and classified on a uniform basis, so that reports from all parts of the nation are comparable.

TABLE 8.—DEMAND FOR TEACHERS IN SEPTEMBER 1956, IN 32 STATES, ALASKA, AND THE DISTRICT OF COLUMBIA, AND THE SUPPLY PRODUCED BY COLLEGES IN THE SAME AREAS IN 1955-56 [a]

Major teaching field	Minor teaching field																						
	Agriculture	Art	Commerce	English	Foreign language	Home economics	Industrial arts	Journalism	Library science	Mathematics	Music	Physical education Men	Physical education Women	General science	Biology	Chemistry	Physics	Social studies	Speech	Other	New teachers employed	New supply
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Agriculture	363	1	...	2	1	...	22	...	...	7	...	7	1	29	52	8	1	7	...	6	507	831
2 Art	7	506	6	29	2	...	10	...	3	5	5	3	2	3	1	...	...	17	2	2	603	841
3 Commerce	8	2	1,611	100	11	13	3	6	10	51	5	18	29	10	2	...	...	106	9	21	2,015	2,705
4 English	24	18	77	2,423	262	17	3	74	115	66	35	23	47	50	19	2	4	716	205	41	4,221	3,080
5 Foreign language	...	1	3	128	320	9	1	2	...	8	1	...	3	3	1	1	...	50	1	...	532	639
6 Home economics	4	17	20	63	19	1,428	...	...	8	10	1	4	77	80	54	7	3	27	...	6	1,828	2,345
7 Industrial arts	5	1	6	8	...	3	843	...	...	62	...	62	2	50	9	1	3	37	...	24	1,116	1,378
8 Journalism	...	...	...	15	...	...	...	17	...	...	...	...	...	...	...	...	...	5	...	...	37	29
9 Library science	5	1	2	34	5	4	...	...	238	3	1	...	...	1	1	2	...	19	...	1	317	111
10 Mathematics	9	2	28	59	10	1	17	...	5	1,376	8	68	12	336	34	49	81	123	2	17	2,237	1,302
11 Music	7	12	7	77	4	1	1	1	2	18	1,460	6	4	5	6	...	2	39	2	10	1,664	2,116
12 Phys. Ed.—Men	9	1	26	17	...	...	20	...	...	78	5	875	36	99	62	5	3	247	5	29	1,517	2,806
13 Phys. Ed.—Women	6	8	20	33	1	7	...	1	2	17	8	9	744	37	25	...	...	63	1	18	1,000	1,263
14 General science	10	3	7	27	2	8	6	...	1	222	1	71	27	835	115	37	29	93	1	17	1,512	829
15 Biology	7	...	2	8	2	8	2	...	4	39	2	33	13	75	234	50	23	33	1	11	547	1,090
16 Chemistry	1	...	...	...	1	1	1	...	...	31	...	3	1	27	33	140	34	7	1	2	283	305
17 Physics	1	1	...	1	...	...	1	...	...	30	...	1	...	13	5	7	97	4	...	1	162	130
18 Social studies	15	7	48	268	35	5	14	6	16	90	29	209	39	75	31	4	6	1,804	25	52	2,778	4,558
19 Speech	...	...	...	79	1	...	...	1	...	4	1	1	1	...	...	...	...	11	153	8	260	668
20 Other	11	1	9	26	4	3	4	1	1	33	2	11	3	10	2	1	...	28	22	1,591	1,763	720
21 High-school total																					24,899	27,746
22 Elementary-school total																					37,200	17,871

Source: National Education Association, Research Division. "The 1957 Teacher Supply and Demand Report." *Journal of Teacher Education* 8: 34; March 1957.

[a] Based on reports from: Alabama, Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Florida, Indiana, Kansas, Kentucky, Maine, Maryland, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming. No person is counted twice. This table shows the number of persons who entered teaching positions in September 1956, who did not teach anywhere in 1955-56. Lines 1-21 show new high-school teachers. The major assignment is tallied on the line and the minor assignment in the column. Line 22 shows new elementary-school teachers. The column at the extreme right shows the supply of degree graduates produced in 1956 by colleges in these areas.

How to interpret Table 8. Column 22 (next to last from right) shows the number of new teachers employed to devote either full or the major part of their time to the subject indicated on the same line at the left. Columns 2 to 21 and lines 1 to 20 indicate the number of new secondary-school teachers with each possible combination assignment in two subjects. To illustrate: Column 22, line 4, shows 4,221 new English teachers: column 5, line 4, shows that 2,423 devote full time to English, but column 19, line 4, shows that 716 have minor assignments in social studies. Line 18, column 5, shows that 268 new teachers have major assignments in social studies and minor assignments in English.

formation, including answers to these questions.[6]

Progress in the Preparation of Elementary-School Teachers

The data presented on the preceding pages have emphasized the steadily growing tasks of the public schools. Enrolments have zoomed from 24 to more than 32 million in the last decade; the ratio of teachers in service to pupils enrolled has widened; the number of newly qualified teachers to be produced by the colleges has suffered a five-year decline; and competition of other occupations for college-trained persons has sharpened. Despite these handicaps, however, the quality of educational service provided for American school children has been steadily strengthened. This is particularly true at the elementary-school level, as indicated by the findings of the annual national study since 1948. This study of teacher preparation has been limited to the elementary level, since practically all war emergency measures at the secondary-school level had been eliminated, whereas many thousands of elementary-school classrooms were still staffed with persons who had been licensed for temporary service during the war, despite their obvious lack of qualifications.

It is not easy to measure the many elements which go to make up the qualifications of the competent teacher. Some important factors, such as personality traits, defy accurate measurement. Others, such as the type of certificate held, do not have uniform meaning from state to state; it is not enough to say that a teacher holds a *standard* or an *emergency* certificate. One qualification of every teacher does, however, stand out as being susceptible of accurate measurement. It is the sum of the teacher's efforts at formal educational improvement as indicated by college credits.

It must be recognized, of course, that college attendance does not make a good teacher *per se*, but it may be vigorously contended that lack of formal training is a nearly fatal handicap. This criterion, therefore, has been applied in studying the qualifications of the whole corps of elementary-school teachers in service, year by year, for the past decade. This criterion is in harmony with the nation-wide campaign to improve the educational services of the public schools thru a steady elevation of the standards for admission to the teaching profession.

At first the only available data were fragmentary. Since 1948, however, steady progress has been made in the development of procedures which accurately reflect the educational status of the whole corps of elementary-school teachers. Table 9 shows this progress. The number of states to compile complete reports has varied, but has been substantial each year. Column 4 shows a steady increase in the number of elementary-school teachers who are college graduates, while column 8 shows a corresponding decrease in the number who have completed less than one-half the requirements for the bachelor's degree.

The evidence contained in Table 10 is even more convincing. The reports from the states included in this table have been uninterrupted since 1948; each year the survey in these 11 states has included all elementary-school teachers in service. Column 3 shows that in 1948-49 only about 46 percent were college graduates, whereas in 1956-57 some 70 percent had achieved this level of preparation. Column 7 shows that in 1948-49 more than 16 percent had scant preparation, amounting to less than 60 semester hours of college credit, but this group had been reduced to only about 3 percent in 1956-57.

The latest available information on a state-by-state basis is shown in Table 11 from the Tenth Annual National Teacher Supply and Demand Report. This table contains detailed information on the formal preparation of all elementary-school teachers in all but 12 states. The number of teachers at each of seven levels of preparation (columns 2, 4, 6, 8, 10, 12, and 14) is shown.

Table 11 points up in dramatic fashion the fact that a child's chance of a fair educational opportunity depends upon where he lives during his early school years. In one state, for example, the chances are about 98 in 100 that he will be under the instruction of an elementary-school teacher who has profited by four full years of formal study at the college level. In another state, on the other hand, the chances are fully 3 in 4 that his elementary-

[6] In each state an appropriate officer in the state department of education, usually the director of teacher education and certification, assumes major responsibility for assembling the data which his state contributes to the annual national report. Many of these officers issue annual reports covering more fully the teacher supply and demand situation in their respective states.

school teacher will *not* be a college graduate; the chances may be as high as 1 in 3 that the teacher will not have completed as much as one-half the requirements for college graduation.

In recent years this study has been further extended to include an examination of the qualifications of the new teachers inducted into elementary-school service each year. These new teachers are shown in the italicized lines in Table 11. In almost every state the evidence is clear that newly employed teachers tend to improve the qualifications of the whole staff; they enter service with higher-than-average academic standing. Here again, however, is evidence of the uneven rate of progress among the states. Table 11 shows the few unfortunate instances in which the newly added group pulls down the statewide average.

The High-Standards Approach

During World War II it became general practice to issue emergency certificates to almost anybody who would accept a teaching position. When the plea was made for higher standards of admission to the teaching profession, a nationwide cry arose that such action would further increase the shortage of applicants by driving away interested students. Altho this theory still has some support, its validity has been completely disproved.

The high-standards approach may be defined as the adoption and vigorous enforcement of professionally acceptable standards in (a) the selection of students for admission to teacher-education curriculums; (b) the strengthening of programs of preservice preparation, with balanced emphasis on the general education and professional courses and experiences of the student; (c) the transition of certification practices from emphasis on specific requirements to broad principles; (d) the well-planned induction and orientation of the new teacher; (e) a systematic program of stimulating inservice growth; and (f) the development of teacher welfare practices which as-

TABLE 9.—PREPARATION OF ALL ELEMENTARY-SCHOOL TEACHERS IN CERTAIN STATES, INDICATED IN SEMESTER HOURS OF CREDIT, ANNUALLY SINCE 1949

Year	Number of states participating[a]	120 or more hours		60–119 hours		Less than 60 hours		Total	
		Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total
1	2	3	4	5	6	7	8	9	10
1948–49	23	108,827	49.07%	75,453	34.02%	37,507	16.91%	221,787	100.00%
1949–50	37	156,768	46.71	122,734	36.57	56,117	16.72	335,619	100.00
1950–51	39	184,307	48.85	133,430	35.36	59,594	15.79	377,331	100.00
1951–52	36	201,731	54.65	123,428	33.44	43,987	11.91	369,146	100.00
1952–53	30	209,176	60.44	108,068	31.23	28,848	8.33	346,092	100.00
1953–54	35	281,476	64.72	124,789	28.70	28,629	6.58	434,894	100.00
1954–55	32	316,775	67.62	123,018	26.26	28,652	6.12	468,445	100.00
1955–56	34	331,508	69.33	119,257	24.95	27,340	5.72	478,105	100.00
1956–57	41	365,030	69.59	132,784	25.31	26,728	5.10	524,542	100.00

[a] Not exactly the same states participated each year. The list of states participating in this part of the study each year is shown in the Annual National Teacher Supply and Demand Report for that year.

TABLE 10.—PREPARATION OF ALL ELEMENTARY-SCHOOL TEACHERS IN 11 STATES AND THE DISTRICT OF COLUMBIA, INDICATED IN SEMESTER HOURS OF CREDIT, ANNUALLY SINCE 1949[a]

Year	120 or more hours		60–119 hours		Less than 60 hours		Total	
	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total
1	2	3	4	5	6	7	8	9
1948–49	59,062	45.97%	48,178	37.50%	21,241	16.53%	128,481	100.00%
1949–50	62,298	48.75	44,765	35.03	20,732	16.22	127,795	100.00
1950–51	73,974	55.00	44,937	33.41	15,595	11.59	134,506	100.00
1951–52	79,104	57.65	45,471	33.14	12,636	9.21	137,211	100.00
1952–53	85,019	61.23	44,175	31.81	9,668	6.96	138,862	100.00
1953–54	92,129	63.61	44,982	31.06	7,729	5.33	144,840	100.00
1954–55	100,194	65.72	45,511	29.85	6,761	4.43	152,466	100.00
1955–56	107,584	67.73	45,125	28.41	6,126	3.86	158,835	100.00
1956–57	114,464	69.36	45,180	27.37	5,396	3.27	165,040	100.00

[a] States submitting complete reports each year: Alabama, Arizona, Connecticut, District of Columbia, Kansas, Kentucky, Missouri, North Carolina, Ohio, Utah, Vermont, and Wisconsin.

TABLE 11.—ANALYSIS OF PREPARATION, IN SEMESTER HOURS OF CREDIT, OF ELEMENTARY-SCHOOL TEACHERS IN 36 STATES, ALASKA, HAWAII, PUERTO RICO, AND DISTRICT OF COLUMBIA IN 1956-57 [a]

State	150 or More Hours		120–149 Hours		90–119 Hours		60–89 Hours		30–59 Hours		1–29 Hours		No Hours		Total	
	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Alabama	1,172	8.0%	10,043	69.0%	1,255	8.6%	1,273	8.8%	822	5.6%	0	0.0%	0	0.0%	14,565	100.0%
Alabama (New in 1956–57)	*30*	*3.3*	*624*	*68.9*	*77*	*8.5*	*100*	*11.0*	*75*	*8.3*	*0*	*0.0*	*0*	*0.0*	*906*	*100.0*
Alaska	180	15.4	800	68.5	127	10.9	40	3.4	9	0.8	8	0.7	3	0.3	1,167	100.0
Alaska (New in 1956–57)	*22*	*10.1*	*154*	*70.7*	*16*	*7.3*	*16*	*7.3*	*6*	*2.8*	*4*	*1.8*	*0*	*0.0*	*218*	*100.0*
Arizona	1,525	21.2	5,563	77.1	122	1.7	0	0.0	0	0.0	0	0.0	0	0.0	7,210	100.0
Arizona (New in 1956–57)	*236*	*31.5*	*501*	*66.8*	*13*	*1.7*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*750*	*100.0*
Arkansas	759	11.1	3,888	56.7	1,126	16.4	821	12.0	245	3.5	14	0.2	4	0.1	6,857	100.0
Arkansas (New in 1956–57)	*42*	*5.8*	*306*	*41.9*	*124*	*17.0*	*177*	*24.2*	*71*	*9.7*	*8*	*1.1*	*2*	*0.3*	*730*	*100.0*
California	—56,315 teachers—		—90.8 percent—		3,308	5.3	2,108	3.4	260	0.4	39	0.1	7	[b]	62,037	100.0
Colorado	848	10.8	5,139	65.1	765	9.7	1,109	14.0	30	0.4	3	[b]	1	[b]	7,895	100.0
Colorado (New in 1956–57)	*15*	*2.5*	*472*	*80.0*	*35*	*5.9*	*63*	*10.7*	*4*	*0.7*	*1*	*0.2*	*0*	*0.0*	*590*	*100.0*
Connecticut	1,958	18.7	6,451	61.8	685	6.5	1,262	12.1	41	0.4	29	0.3	20	0.2	10,446	100.0
Connecticut (New in 1956–57)	*69*	*5.8*	*1,047*	*87.2*	*28*	*2.3*	*53*	*4.4*	*3*	*0.2*	*0*	*0.0*	*1*	*0.1*	*1,201*	*100.0*
Delaware	268	16.8	985	61.6	60	3.8	178	11.1	32	2.0	53	3.3	22	1.4	1,598	100.0
Delaware (New in 1956–57)	*10*	*5.3*	*149*	*78.8*	*3*	*1.6*	*19*	*10.0*	*4*	*2.1*	*2*	*1.1*	*2*	*1.1*	*189*	*100.0*
District of Columbia	—1,693 teachers—		—83.3 percent—		193	9.5	110	5.4	19	0.9	19	0.9	0	0.0	2,034	100.0
District of Columbia (New in 1956–57)	*—213 teachers—*		*—100.0 percent—*		*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*213*	*100.0*
Hawaii	917	49.3	594	31.9	206	11.1	96	5.1	24	1.3	24	1.3	0	0.0	1,861	100.0
Hawaii (New in 1956–57)	*84*	*28.6*	*172*	*58.5*	*38*	*12.9*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*294*	*100.0*
Illinois [c]	7,512	18.9	20,096	50.7	5,311	13.4	5,564	14.0	1,109	2.8	61	0.2	0	0.0	39,653	100.0
Indiana	4,867	25.2	9,961	51.6	1,785	9.3	2,412	12.5	256	1.3	21	0.1	0	0.0	19,302	100.0
Indiana (New in 1956–57)	*243*	*13.5*	*1,186*	*66.1*	*131*	*7.3*	*192*	*10.7*	*35*	*2.0*	*8*	*0.4*	*0*	*0.0*	*1,795*	*100.0*
Iowa	1,415	8.7	3,916	24.1	1,981	12.2	5,540	34.0	1,914	11.8	1,485	9.1	14	0.1	16,265	100.0
Iowa (New in 1956–57)	*73*	*3.4*	*466*	*21.5*	*113*	*5.2*	*1,115*	*51.5*	*164*	*7.6*	*229*	*10.6*	*5*	*0.2*	*2,165*	*100.0*
Kansas	2,649	18.3	6,179	42.8	2,303	16.0	3,087	21.4	209	1.4	10	0.1	2	[b]	14,439	100.0
Kansas (New in 1956–57)	*124*	*7.1*	*822*	*47.2*	*272*	*15.6*	*517*	*29.7*	*7*	*0.4*	*0*	*0.0*	*0*	*0.0*	*1,742*	*100.0*
Kentucky	912	6.1	5,699	37.9	3,010	20.0	3,953	26.3	922	6.1	494	3.3	41	0.3	15,031	100.0
Maine	207	4.0	1,574	30.8	1,033	20.2	1,659	32.5	640	12.5	0	0.0	0	0.0	5,113	100.0
Maine (New in 1956–57)	*10*	*1.9*	*267*	*50.6*	*84*	*15.9*	*108*	*20.4*	*59*	*11.2*	*0*	*0.0*	*0*	*0.0*	*528*	*100.0*
Maryland	1,543	15.2	5,765	56.8	955	9.4	1,507	14.9	271	2.7	19	0.2	81	0.8	10,141	100.0
Minnesota	487	3.7	3,971	30.3	1,613	12.3	5,345	40.8	1,551	11.9	129	1.0	0	0.0	13,096	100.0
Minnesota (New in 1956–57)	*0*	*0.0*	*858*	*70.4*	*0*	*0.0*	*285*	*23.4*	*75*	*6.2*	*0*	*0.0*	*0*	*0.0*	*1,218*	*100.0*
Mississippi [c]	574	5.4	5,382	50.2	2,019	18.8	1,517	14.2	854	8.0	368	3.4	0	0.0	10,714	100.0
Missouri	3,911	20.7	8,902	47.2	2,201	11.7	2,719	14.4	1,100	5.8	27	0.2	3	[b]	18,863	100.0
Montana	555	13.0	1,147	26.9	837	19.6	1,564	36.6	157	3.7	10	0.2	0	0.0	4,270	100.0
Montana (New in 1956–57)	*23*	*7.2*	*71*	*22.3*	*25*	*7.8*	*181*	*56.7*	*19*	*6.0*	*0*	*0.0*	*0*	*0.0*	*319*	*100.0*
Nebraska	340	3.7	2,117	22.9	1,293	14.0	2,415	26.1	1,761	19.1	1,196	12.9	122	1.3	9,244	100.0
Nebraska (New in 1956–57)	*30*	*1.7*	*219*	*12.3*	*112*	*6.3*	*469*	*26.4*	*330*	*18.6*	*494*	*27.9*	*120*	*6.8*	*1,774*	*100.0*
Nevada	261	15.6	902	53.8	257	15.3	215	12.8	37	2.2	3	0.2	1	0.1	1,676	100.0
Nevada (New in 1956–57)	*20*	*8.9*	*158*	*69.9*	*20*	*8.9*	*26*	*11.5*	*2*	*0.8*	*0*	*0.0*	*0*	*0.0*	*226*	*100.0*
New Hampshire [c]	97	4.5	865	40.0	303	14.0	759	35.1	76	3.5	50	2.3	13	0.6	2,163	100.0
New Hampshire (New in 1956–57)	*10*	*2.9*	*224*	*64.0*	*40*	*11.4*	*68*	*19.4*	*3*	*0.9*	*5*	*1.4*	*0*	*0.0*	*350*	*100.0*
New Mexico	1,086	24.0	3,141	69.5	249	5.5	46	1.0	0	0.0	0	0.0	0	0.0	4,522	100.0
New Mexico (New in 1956–57)	*53*	*11.4*	*361*	*78.0*	*35*	*7.6*	*14*	*3.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*463*	*100.0*
North Carolina (White)	1,800	9.8	14,637	79.6	1,350	7.3	385	2.1	160	0.9	50	0.3	0	0.0	18,382	100.0
North Carolina (White—New in 1956–57)	*35*	*1.9*	*1,440*	*78.6*	*276*	*15.1*	*41*	*2.2*	*23*	*1.3*	*12*	*0.7*	*4*	*0.2*	*1,831*	*100.0*
North Carolina (Negro)	950	13.7	5,943	85.4	50	0.7	15	0.2	0	0.0	0	0.0	0	0.0	6,958	100.0
North Carolina (Negro—New in 1956–57)	*29*	*6.1*	*428*	*90.7*	*9*	*1.9*	*0*	*0.0*	*6*	*1.3*	*0*	*0.0*	*0*	*0.0*	*472*	*100.0*

Table 11 is continued on page 122.

TABLE 11.—ANALYSIS OF PREPARATION, IN SEMESTER HOURS OF CREDIT, OF ELEMENTARY-SCHOOL TEACHERS IN 36 STATES, ALASKA, HAWAII, PUERTO RICO, AND DISTRICT OF COLUMBIA IN 1956-57 (Continued)

State	150 or More Hours		120–149 Hours		90–119 Hours		60–89 Hours		30–59 Hours		1–29 Hours		No Hours		Total	
	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total	Number of teachers	Percent of total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
North Dakota [d]	39	0.9	548	12.0	316	7.0	2,034	44.7	1,043	22.9	469	10.3	99	2.2	4,548	100.0
North Dakota (New in 1956–57) [e]	*0*	*0.0*	*48*	*15.9*	*253*	*83.8*	*0*	*0.0*	*1*	*0.3*	*0*	*0.0*	*0*	*0.0*	*302*	*100.0*
Ohio	5,021	14.5	16,795	48.5	5,609	16.2	6,718	19.4	415	1.2	71	0.2	0	0.0	34,629	100.0
Ohio (New in 1956–57)	*0*	*0.0*	*3,090*	*74.0*	*251*	*6.0*	*835*	*20.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*4,176*	*100.0*
Oklahoma	3,107	26.2	8,518	71.7	226	1.9	25	0.2	0	0.0	0	0.0	0	0.0	11,876	100.0
Oklahoma (New in 1956–57)	*9*	*1.4*	*609*	*97.2*	*9*	*1.4*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*627*	*100.0*
Oregon	3,631	34.4	4,529	43.0	1,752	16.6	545	5.2	87	0.8	0	0.0	0	0.0	10,544	100.0
Oregon (New in 1956–57)	*291*	*23.4*	*663*	*53.3*	*174*	*14.0*	*99*	*8.0*	*16*	*1.3*	*0*	*0.0*	*0*	*0.0*	*1,243*	*100.0*
Puerto Rico	—1,901 teachers—		—24.1 percent—		—5,539 teachers—		—70.1 percent—		456	5.8	0	0.0	0	0.0	7,896	100.0
Puerto Rico (New in 1956–57)	*—350 teachers—*		*—28.5 percent—*		*—598 teachers—*		*—48.6 percent—*		*282*	*22.9*	*0*	*0.0*	*0*	*0.0*	*1,230*	*100.0*
South Carolina (White)	606	8.2	5,198	70.9	841	11.5	482	6.6	0	0.0	203	2.8	0	0.0	7,330	100.0
South Carolina (White—New in 1956–57)	*6*	*1.2*	*452*	*87.6*	*30*	*5.8*	*21*	*4.1*	*7*	*1.3*	*0*	*0.0*	*0*	*0.0*	*516*	*100.0*
South Carolina (Negro)	414	7.9	3,964	75.5	496	9.4	290	5.5	0	0.0	88	1.7	0	0.0	5,252	100.0
South Carolina (Negro—New in 1956–57)	*5*	*2.2*	*216*	*93.6*	*3*	*1.3*	*2*	*0.9*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*226*	*100.0*
South Dakota	—639 teachers—		—11.3 percent—		—2,723 teachers—		—48.0 percent—		2,225	39.3	78	1.4	0	0.0	5,665	100.0
South Dakota (New in 1956–57) [f]	*—73 teachers—*		*—13.4 percent—*		*—241 teachers—*		*—44.4 percent—*		*204*	*37.6*	*25*	*4.6*	*0*	*0.0*	*543*	*100.0*
Tennessee	2,131	10.8	10,301	52.4	2,564	13.1	3,698	18.8	309	1.6	647	3.3	0	0.0	19,650	100.0
Tennessee (New in 1956–57) [g]	*5*	*0.4*	*720*	*64.7*	*92*	*8.3*	*136*	*12.2*	*40*	*3.6*	*120*	*10.8*	*0*	*0.0*	*1,113*	*100.0*
Texas	12,820	31.2	26,695	64.9	1,073	2.6	392	0.9	126	0.3	33	0.1	0	0.0	41,139	100.0
Texas (New in 1956–57)	*250*	*4.8*	*4,475*	*86.1*	*259*	*5.0*	*60*	*1.2*	*152*	*2.9*	*0*	*0.0*	*0*	*0.0*	*5,196*	*100.0*
Utah	801	19.8	2,583	64.0	281	7.0	267	6.6	79	2.0	21	0.5	5	0.1	4,037	100.0
Utah (New in 1956–57)	*3*	*0.6*	*392*	*80.3*	*36*	*7.4*	*48*	*9.9*	*6*	*1.2*	*1*	*0.2*	*2*	*0.4*	*488*	*100.0*
Vermont	77	4.0	770	39.4	266	13.6	664	34.0	157	8.0	19	1.0	0	0.0	1,953	100.0
Vermont (New in 1956–57)	*5*	*2.4*	*128*	*61.5*	*18*	*8.7*	*44*	*21.1*	*11*	*5.3*	*2*	*1.0*	*0*	*0.0*	*208*	*100.0*
Virginia	525	3.2	9,290	56.2	4,958	30.0	0	0.0	1,756	10.6	0	0.0	0	0.0	16,529	100.0
Virginia (New in 1956–57)	*57*	*1.6*	*2,539*	*69.1*	*698*	*19.0*	*0*	*0.0*	*379*	*10.3*	*0*	*0.0*	*0*	*0.0*	*3,673*	*100.0*
West Virginia [h]	1,421	15.3	4,642	50.1	863	9.3	1,650	17.8	246	2.7	441	4.8	0	0.0	9,263	100.0
West Virginia (New in 1956–57) [h]	*16*	*3.3*	*185*	*38.2*	*65*	*13.4*	*117*	*24.2*	*36*	*7.5*	*65*	*13.4*	*0*	*0.0*	*484*	*100.0*
Wisconsin	1,857	11.2	6,573	39.9	2,454	14.9	4,948	30.0	628	3.8	33	0.2	0	0.0	16,493	100.0
Wisconsin (New in 1956–57)	*40*	*2.2*	*773*	*42.6*	*127*	*7.0*	*814*	*44.8*	*60*	*3.3*	*1*	*0.1*	*0*	*0.0*	*1,815*	*100.0*
Wyoming	100	4.5	1,073	48.0	397	17.8	617	27.6	48	2.1	1	[b]	0	0.0	2,236	100.0
Wyoming (New in 1956–57)	*5*	*2.1*	*114*	*48.1*	*26*	*11.0*	*82*	*34.6*	*10*	*4.2*	*0*	*0.0*	*0*	*0.0*	*237*	*100.0*
Number of teachers	(—365,030—)				(—132,784—)				(—20,074—)		(—6,216—)		(—438—)		(—524,542—)	
Percent of total	(—69.6%—)				(—25.3%—)				(—3.8%—)		(—1.2%—)		(—0.1%—)		(—100.0%—)	

Source: National Education Association, Research Division. "The 1957 Teacher Supply and Demand Report." *Journal of Teacher Education* 8: 38-39; March 1957.

[a] Wherever possible, the elementary-school teachers in service in a state are divided into seven groups, as shown in the seven column headings of this table. In some of the participating states it was only possible to divide the teachers into broader groups. The totals, therefore, are shown in only these five groups: teachers having 120 or more semester hours of college credit; teachers having 60 but not more than 119 semester hours; teachers having 30 but not more than 59 semester hours; teachers having not more than 29 semester hours, and those having no college credit. In 31 states, Alaska, Hawaii, Puerto Rico, and the District of Columbia it was possible to make a separate analysis of the preparation of all new elementary-school teachers entering service in September 1956. These reports are shown in separate lines in *italics*. They provide a quick method of determining whether the new group improves or pulls down the average preparation of all elementary-school teachers in service in that state. These new teachers are included in the state total shown in the preceding line; they are not added twice in the grand total.

[b] Less than 1/10 of 1 percent. [c] This report is for 1955-56, not 1956-57. [d] Does not include teachers in 93 of the 405 grade schools. [e] Does not include 659 new rural school teachers. [f] Includes inexperienced teachers only. Total new elementary-school teachers: 1166. [g] Includes inexperienced teachers only. [h] Includes teachers in 51 of the 55 counties.

sure the attainment of those many satisfactions which, along with a fair salary, comprise the total compensation of the professional teacher.

The attainment of this goal is a large order indeed. Its complete fulfilment is still in the distance. But the dividends of the 10-year struggle toward higher standards can clearly be seen. Tables 9, 10, and 11 contain some of the evidence. Table 12 shows progress in a different way: Column 2 shows the requirements in each state in 1951 for the regular elementary-school teaching certificate; column 3 shows these requirements in 1957.

In 1951 only 20 of the states (and territories) had subscribed to the policy that every elementary-school teacher should be a college graduate. Today no fewer than 37 states have adopted this standard or are in the process of doing so.

The validity of the high-standards approach has been demonstrated in yet another way. In the states maintaining the degree standard for the certification of elementary-school teachers, students have been attracted to enter preparation for teaching *at a faster rate* than in the other states. It becomes increasingly clear that the higher standard attracts the discriminating student who is seriously interested in a professional career, while low standards drive him into other fields; conversely, low standards attract the person with no particular professional goals, who enters teaching only as a temporary kind of employment. Truly, Gresham's law applies to human talent as well as to money: the bad invariably drives out the good.

The high-standards approach could not be maintained or even developed without the support of the preparation-type salary schedule. The acceptance of this concept was an essential preliminary step. In 1941 only 31 percent of the urban school districts reported that a single-salary schedule was in operation. The soundness of this basic principle, however, has been demonstrated by its adoption almost everywhere. In 1945 it was in operation in 43 percent of the urban school systems; in 1947, in 64 percent; in 1949, in 94 percent. The contribution of this principle can hardly be overestimated.

Today the typical elementary-school teacher is supported by one full year of college preparation more than her counterpart enjoyed 10 years ago. This vast upgrading movement has gone forward in the face of staggering odds. It is the most direct evidence that the unified efforts of a devoted, professional group *can* improve the quality of its service to the American society. The improved qualifications of the elementary-school teacher and the creation of an atmosphere conducive to further progress may well be recorded as the outstanding educational achievement of the postwar era. Certainly it is a major contribution in the struggle to provide competent teachers.

TABLE 12.—MINIMUM REQUIREMENTS FOR REGULAR ELEMENTARY-SCHOOL TEACHING CERTIFICATES

State	1951	1957
1	2	3
Alabama	96 sem. hrs.	Bach. deg.
Alaska	Bach. deg.	90 sem. hrs.
Arizona	Bach. deg.	Bach. deg.
Arkansas	30 sem. hrs.	60 sem. hrs.
California	Bach. deg.	Bach. deg.
Colorado	60 sem. hrs.	60 sem. hrs.
Connecticut	Bach. deg.	Bach. deg.
Delaware	Bach. deg.	Bach. deg.
District of Columbia	Bach. deg.	Bach. deg.
Florida	60 sem. hrs.	Bach. deg.
Georgia	60 sem. hrs.	Bach. deg.
Hawaii	Bach. deg.	Bach. deg.
Idaho	64 sem. hrs.	Bach. deg.
Illinois	Bach. deg.	Bach. deg.
Indiana	Bach. deg.	Bach. deg.
Iowa	45 sem. hrs.	60 sem. hrs.
Kansas	45 sem. hrs.	60 sem. hrs.
Kentucky	64 sem. hrs.	Bach. deg.
Louisiana	Bach. deg.	Bach. deg.
Maine	64 sem. hrs.	96 sem. hrs.
Maryland	Bach. deg.	Bach. deg.
Massachusetts	No state certification	Bach. deg.
Michigan	30 sem. hrs.	Bach. deg.
Minnesota	60 sem. hrs.	Bach. deg.
Mississippi	30 sem. hrs.	Bach. deg.
Missouri	60 sem. hrs.	64 sem. hrs.
Montana	60 sem. hrs.	64 sem. hrs.
Nebraska	High-school normal course	12 sem. hrs.
Nevada	31 sem. hrs.	Bach. deg.
New Hampshire	Bach. deg.	Bach. deg.
New Jersey	Bach. deg.	Bach. deg.
New Mexico	60 sem. hrs.	Bach. deg.
New York	Bach. deg.	Bach. deg.
North Carolina	Bach. deg.	Bach. deg.
North Dakota	32 sem. hrs.	32 sem. hrs.
Ohio	93 sem. hrs.	Bach. deg.
Oklahoma	78 sem. hrs.	Bach. deg.
Oregon	90 sem. hrs.	Bach. deg.
Pennsylvania	Bach. deg.	Bach. deg.
Puerto Rico	Normal course	67 sem. hrs.
Rhode Island	Bach. deg.	Bach. deg.
South Carolina	60 sem. hrs.	Bach. deg.
South Dakota	30 sem. hrs.	30 sem. hrs.
Tennessee	60 sem. hrs.	Bach. deg.
Texas	30 sem. hrs.	Bach. deg.
Utah	Bach. deg.	Bach. deg.
Vermont	60 sem. hrs.	Bach. deg.
Virginia	Bach. deg.	Bach. deg.
Washington	Bach. deg.	Bach. deg.
West Virginia	64 sem. hrs.	64 sem. hrs.
Wisconsin	60 sem. hrs.	64 sem. hrs.
Wyoming	64 sem. hrs.	60 sem. hrs.

Source: Armstrong, W. Earl, and Stinnett, T. M. *Certification Requirements for School Personnel.* U. S. Office of Education, Federal Security Agency, Circular No. 290. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1951. 182 p.

Armstrong, W. Earl, and Stinnett, T. M. *A Manual on Certification Requirements for School Personnel in the United States.* 1957 edition. Washington, D. C.: National Education Association, June 1957. p. 19.

III. The Postwar Teacher Supply and Demand Problem in Institutions of Higher Education

Section II of this report has focused attention upon this fact: By dint of a dozen years of continuous, unremitting effort a substantial body of information has been assembled; it is now possible to view the supply and demand problem of the elementary and secondary schools within an organized framework. A foundation has been established for a direct attack on some of the most difficult problems yet unsolved.

Section III of this report focuses attention upon the unhappy fact that no such progress has been made at the higher education level; colleges and universities are without much of the basic information necessary for a systematic attack upon their problem.

A nationwide study of the problem was sponsored by the NEA in 1948.[1] It was an expansion of a regional study under the same directorship and sponsored by the Research and Service Commission of the North Central Association of Colleges and Secondary Schools. This pioneer national study summarized reports from 734 colleges and universities of all types, both public and private, of conditions in 1948. It highlighted these facts:

1. The most critical shortages were in chemistry, physics, mathematics, psychology, and biology.
2. Normal teaching loads ranged between 15 and 20 semester hours per week with maximums of 15 to 30 hours per week.
3. Seven percent of the normally permanent teaching positions were held by teachers of temporary status.
4. Twelve percent of the college teaching staffs of 1948-49 were not engaged in college teaching in 1947-48.
5. One-half of the reporting institutions indicated that they had resorted to lowering standards to recruit new teachers.

In 1953 the Research Division of the NEA launched a series of annual studies of pertinent problems in higher education. The report issued as the December 1954 RESEARCH BULLETIN and entitled "Instructional Staff Practices and Policies in Degree-Granting Institutions, 1953-54" was based on a study designed to lay the background for a biennial study of supply and demand at the college level. The first such report was issued as the December 1955 RESEARCH BULLETIN under the title, "Teacher Supply and Demand in Degree-Granting Institutions, 1954-55."

New Report Forthcoming

The second such study in the biennial series is now nearing completion. This report, much more comprehensive than the one issued two years earlier, will be ready for distribution in late October or early November, 1957.[2]

This forthcoming report will

1. Review the available records of enrolments
2. Seek out factors, other than sheer numbers in the normal college-going-age group, which have influenced enrolments and are likely to do so in the decade ahead
3. Compare recent resident enrolments with full-time and part-time teaching staffs
4. Take a look at the recent turnover in administrative positions
5. Identify the new full-time teachers employed in 1955-56, and compare them with the groups employed the two preceding years and the following year, on the basis of (a) their formal preparation, (b) their distribution among the various teaching fields, (c) their sex, and (d) the sources from which they came
6. Compare these recently employed groups of new full-time teachers with the complete corps of full-time teachers on the basis of preparation, sex, and distribution among the teaching fields
7. Point up the extent to which existing shortages are greater in some teaching fields than in others
8. Perhaps most importantly, show what has happened, occupationally, to the doctor's degree graduates of 1955 and 1956, on the assumption that these most recent groups to attain the highest level of formal preparation are the most coveted candidates.

Each of these items will be reported separately for these nine different types of institutions: state universities, nonpublic universities, municipal universities, land-grant colleges, state colleges, teachers colleges, and nonpublic colleges of over 1000, between 500 and 999, and under 500 enrolment.

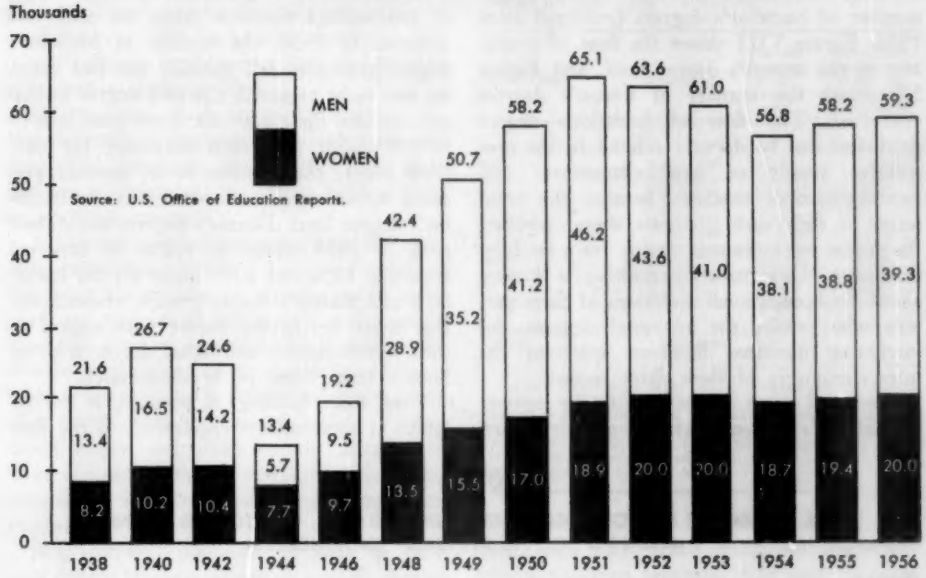
The forthcoming report will throw new light on a number of current problems, but

[1] Mosier, Earl E. *College-Teacher Supply and Demand in the United States.* Report for the 1948-49 School Year. Washington, D. C.: National Commission on Teacher Education and Professional Standards of the National Education Association, 1950. 23 p.

[2] The Research Division biennial study of college teacher supply and demand will alternate with a biennial study of college salaries, the first of which was reported in October 1956. Each of these biennial studies will be conducted within an established framework so that exact comparisons may be made and trends discovered. These studies are a part of the expanded program of service to all of the teaching and administrative personnel in institutions of higher education.

FIGURE VIII

TOTAL NUMBER OF MASTER'S DEGREE GRADUATES, BY SEX, 1938 TO 1948 BIENNIALLY, AND 1948 TO 1956 ANNUALLY (IN THOUSANDS)



its two major goals are to supply some vitally important facts for use in counseling present and prospective graduate students, and to bolster the arguments of college presidents as they present their needs to boards of control, trustees, legislative committees, denominational constituents, and the supporting public generally.

Difficulties To Be Encountered

Any effort to study the supply of and demand for teachers at the college level encounters numerous difficulties not present at the elementary- and secondary-school level. Most intriguing, perhaps, is the task of identifying the "qualified" candidate. At the public-school level a ready-made criterion is at hand: Every state maintains definite requirements for the teaching certificate; an emerging college graduate either does or does not meet these requirements, and thus the annual group of newly "qualified" candidates for elementary- and secondary-school teaching positions can be identified and reported, as in Section II of this report.

But not so with the new prospective candidate for college teaching; almost every campus enjoys the privilege of setting up its own standards (and of maintaining or deviating from them). And, on most campuses, the required standards in one department or teaching field may differ widely from the requirements in another. Thus, it is not possible to identify and to describe the qualifications of any group of persons who, at the beginning of a school year, may be designated the new "supply" of candidates for college teaching. Nevertheless, it is enlightening to examine the record of the past 20 years as regards the conferment of master's and doctor's degrees.

In December 1954 the NEA Research Division reported on the formal preparation of the whole corps of full-time college teachers in this way:

Amount of preparation	*Percent of college teachers*
Doctor's degrees	40.5%
Master's degree plus one year of graduate study	20.9
Master's degree only	28.2
Less than master's degree	10.4
Total	100.0%

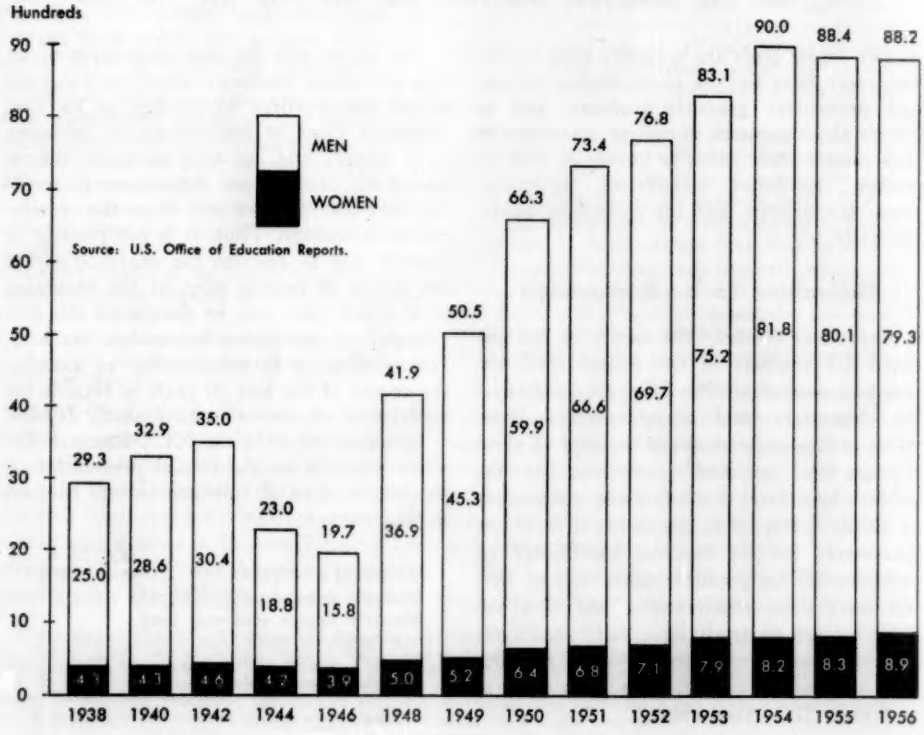
Thus, the 1954 report focuses attention upon the annual product of the colleges and universities at all three degree levels. Figure II, page 108, shows the wide swings in the number of bachelor's degrees conferred since 1938. Figure VIII shows the flow of graduates at the master's degree level, and Figure IX shows the number of doctor's degrees conferred. The flow of bachelor's degree graduates can be directly related to the prospective supply of new elementary- and secondary-school teachers, because the transcript of each such graduate shows whether the person can or cannot qualify for a teaching certificate. Unfortunately nothing is known about the occupational ambitions of these persons who receive the advanced degrees. An intriguing question, however, concerns the interrelationship of these three records.

How and when does a turn in the number of bachelor's degrees conferred affect the flow of master's degree graduates? And what about the impact of the latter upon the number of doctor's degrees to follow? Surely these questions hold some implications for the supply of new college teachers. After the peak was achieved in 1950, the number of bachelor's degree graduates fell steadily for five years. As was to be expected, master's degree graduates reached their high mark one year later—in 1951—but they then decreased for only three years; their return to an uptrend preceded by one year such a turn at the bachelor's degree level. Doctor's degrees made their peak in 1954, about as might be expected from the 1950 and 1951 highs for the bachelor's and master's degree groups, respectively. But what lies in the future with regard to these relationships, and what forces will influence them, must yet be determined.

Even more baffling, if possible, is the relation of total college enrolments to the flow

FIGURE IX

TOTAL NUMBER OF DOCTOR'S DEGREE GRADUATES, BY SEX, 1938 TO 1948 BIENNIALLY, AND 1948 TO 1956 ANNUALLY (IN HUNDREDS)



of graduates at all degree levels, because the total enrolment is the basic indication of need for instructional staff. Table 13 shows the total enrolment each year since 1946. Its lack of a consistent relationship to the number of graduates at the bachelor's, master's, and doctor's degree levels only points up the complex nature of the problem.

The question of an equitable teaching load for the college teacher is an unsettled one. Prevailing standards vary widely from institution to institution, and from field to field on the same campus.

A further complication stems from the enormous variations in using part-time teachers. Certainly the custom of universities in using graduate students as instructors at the undergraduate level is widespread. Probably this custom will grow, as graduate schools seek more ways to subsidize the graduate student. But many other persons of widely varying qualifications and from sources dictated by local circumstances are employed either temporarily or on a continuing basis as part-time teachers.

It is well-nigh impossible to count the part-time college teachers, inasmuch as their number varies almost from day to day thruout the academic year. Reports prepared in January 1957 are indicative of the widely varying practice among the different types of institutions. They show the ratio of full-time to part-time teachers to be as follows:

State universities	3.8 to 1
Nonpublic universities	1.1 to 1
Municipal universities	1.4 to 1
Land-grant colleges	5.4 to 1
State colleges	8.2 to 1
Teachers colleges	8.7 to 1
Nonpublic colleges (by enrolment):	
1,000 and over	3.6 to 1
500-999	4.2 to 1
Under 500	3.3 to 1
All institutions	2.5 to 1

These figures do not reveal the relation of full-time teachers to part-time teachers in student-contact hours. They do imply, however, the generous use of graduate students in an instructional capacity in the institutions maintaining graduate schools.

It is wholly impossible, of course, to report the qualifications of part-time college teachers. No way has yet been devised to group them according to the recognized levels of formal preparation, as has been done with the whole corps of full-time teachers, and as is done with each year's group of newly employed full-time teachers. And such measure, if applied, would yield results of doubtful meaning since a good many (but unknown number) of the graduate students serving as part-time teachers are doing so with no preparation for teaching and with no desire or intention to enter the occupation on a full-time basis.

A further complication in determining future demand for college teachers stems from the growing awareness that the problem of utilizing available personnel must be re-examined. And a final and perhaps most insoluble problem is that of predicting future enrolments, not only totals but for specific types of institutions, geographic areas, and in fields of study. The more carefully one reviews the underlying causes of the violent fluctuations in enrolments since 1945 the clearer this fact stands out: College enrolments, and thus the demand for college teachers, will expand enormously during the next two decades at least. Some, and perhaps many of the conditioning influences, however, are yet to be identified and the extent of their force remains to be measured. And thus the task of providing competent teachers casts its shadow far into the future.

TABLE 13.—COLLEGE ENROLMENT, YEAR-BY-YEAR PERCENT OF CHANGE, AND FIRST-TIME STUDENTS AS A PERCENT OF TOTAL ENROLMENT, FALL OF 1946 THRU FALL OF 1956

Year	Enrolment	Percent of change from previous year	First-time students as a percent of total enrolment
1	2	3	4
1946	2,078,095	....	33.5%
1947	2,338,226	+12.5%	25.4
1948	2,408,249	+ 3.0	23.6
1949	2,456,841	+ 2.0	22.7
1950	2,296,592	− 6.5	22.5
1951	2,116,440	− 7.8	22.3
1952	2,148,284	+ 1.5	25.0
1953[a]	2,250,701	+ 4.8	25.4
1954[a]	2,499,750	+11.1	25.7
1955[a]	2,678,623	+ 7.2	23.2
1956[a]	2,946,985	+10.0	24.5
Change from 1946 to 1956	868,890	+41.8%	....

Source: Enrolments from: U S. Department of Health, Education, and Welfare, Office of Education. *Opening Enrollment in Higher Educational Institutions, Fall 1956.* Circular No. 496. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1957. Tables I and 3.

[a] Includes students in extension courses carrying credit toward degree, not included prior to 1953.

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ALASKA—Mrs. Leah W. Macchia, Department of Education
ARIZONA—W. Fred Miller, State Department of Public Instruction
ARKANSAS—Ed McCuistion, State Department of Education
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CONNECTICUT—Maurice J. Ross, State Department of Education
DELAWARE—John G. Parres, State Department of Public Instruction
DISTRICT OF COLUMBIA—Thomas J. Holmes, City School Administration
FLORIDA—M. Mitchell Ferguson, State Department of Education
GEORGIA—J. J. Medlin, Jr., State Department of Education
HAWAII—Earl L. McTaggart, Deal Crooker, Department of Public Instruction
IDAHO—Ross E. Barney, State Department of Education
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